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The Economic Record

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THE NEW ZEALAND ECONOMY 1960-61[1]

1. *Introduction*

The main features of the 1960-61 year have been: a severe inflation in the second half of the financial year, a crisis in the balance of payments created by excessive importing, a sharp fall in private savings associated with a rise of 14 per cent in personal consumption, a very substantial rise in bank advances and, finally, after external capital transactions are eliminated, the first surplus in the government budget for some years.

Other developments should also be mentioned. An independent Monetary and Economic Council was set up to study major economic problems.[2] New Zealand joined the International Monetary Fund after a protracted debate in Parliament. The first revision of the New Zealand tariff since 1934 has also been completed. The N.Z. Institute of Economic Research has published its first research paper about capital requirements for growth.

2. *National Income Aggregates*

	1958		1959		1960		1961*	
Gross national product	1,085		1,135		1,230		1,309	
At 1955 prices	1,020		1,012		1,071		1,129	
Net investment overseas	—51		—24		35		—55	
Total domestic market supplies	1,136		1,159		1,195		1,364	
Expenditures:								
Personal consumption	723	(*67*)	744	(*66*)	769	(*63*)	876	(*67*)
Private capital formation	143	(*23*)	140	(*22*)	145	(*21*)	171	(*22*)
Public sector capital formation†	107		106		112		118	
Public sector current expenditure†	147	(*14*)	153	(*13*)	163	(*13*)	174	(*13*)
Total expenditures	1,120		1,143		1,189		1,339	
Total supplies less total expenditures (stock changes)	16		16		6		25	

*Provisional.
†Includes local government expenditures.

Italics represent percentages of gross national product.

Source: Official Estimates of National Income.

[1] I am grateful to my colleagues in the Department of Economics for helpful comments on earlier drafts of this survey.

[2] This Council's first Report was released on the 11th October, after this study had been virtually completed.

Composition of Private Incomes

(March Years)

	1958		1959		1960		1961*	
1. Salary, wage, armed forces payments	547	*(55·1)*	570	*(55·2)*	604	*(53·3)*	651	*(53·8)*
2. Other personal incomes inc. house rents	271	*(27·2)*	275	*(26·6)*	311	*(27·4)*	313	*(25·9)*
3. Social Security payments	70	*(7)*	80	*(7·8)*	99	*(8·8)*	107	*(8·8)*
4. Company income	106	*(10·6)*	109	*(10·5)*	118	*(10·4)*	138	*(11·4)*
Total private incomes	994		1,033		1131		1207	
Taxation	173	*(17·4)*	221	*(21·4)*	210	*(18·6)*	247	*(20·5)*
Private disposable incomes	821		812		921		960	

Allocation of Private Disposable Incomes

Personal consumption	723	*(72·7)*	744	*(72)*	769	*(68)*	876	*(72·6)*
Private savings:								
Undistributed profits	23	*(9·9)*	31	*(6·6)*	37	*(13·4)*	42	*(6·9)*
Other private savings	75		37		115		42	

Italics represent percentages of private incomes.

*Provisional.

Source: Official Estimates of National Income.

Gross national product, deflated by the consumers' price index, rose by 5·4 per cent in 1960-61. The real increase per head of population was 3·5 per cent. At constant export prices the real increase per head of population would be in the vicinity of 5·3 per cent. This, however, would appear to overstate the gains in productivity achieved in the last year for two reasons: there was an increase in overtime worked and, for the first time since the war, the percentage increase in the labour force (2·4 per cent) was greater than the percentage increase in the total population (1·85 per cent). Nevertheless the gain in productivity would almost certainly have exceeded the recent average of about 2 per cent.

A decrease of £55 m. in net overseas investment made possible a rise in aggregate demand which was substantially greater than the rise in gross national product. Personal expenditure on consumer goods and services rose by nearly 14 per cent, private capital formation by almost 18 per cent, while stock accumulation rose from £6 m. to £25 m. The public sector experienced only moderate increases of 5·4 per cent in capital formation and 6·7 per cent in current expenditures. The share of consumption in gross national product rose from 63 per cent to 67 per cent, while that of investment (excluding stocks) rose slightly from 21 per cent to 22 per cent.

Both company and wage incomes absorbed slightly higher percentages of private incomes, while the share of other personal incomes fell from 27·4 per cent to 25·9 per cent. When account is taken of changes in stabilization accounts, farm incomes actually dropped from £150 m. to £139 m.

The sharp fall in private savings from 13·4 per cent to 6·9 per cent of private incomes was the result of a rise in the shares of both consumption (from 68 per cent to 72·6 per cent) and taxation (from 18·6 per cent to 20·5 per cent). Personal savings actually fell from £115 m. to £42 m., undistributed profits rose from £37 m. to £42 m.

Anticipating later conclusions, we might now note some of the factors which may have been responsible for the sharp rise in private expenditures from £914 m. to £1,047 m. We will see that the effect of the government budget was uncertain, while the wage order decision of 1959 contributed to the rise in incomes. There was probably some lagged expenditure out of farm incomes which, in the 1959-60 year, were the highest ever recorded. The large increase in both profits after tax and real national income in 1960 must certainly have induced some of the rise in private capital formation. To the extent, moreover, that there is a suppressed demand for imports, their greater availability in the last year may have stimulated some rise in expenditure. Finally, we will show that liquidity improved and this, too, may have stimulated private spending.

The increase in expenditure was matched by a rise in imports, some gains in productivity, some increase in overtime hours worked and substantial additions to the labour force. The response of local production to increased expenditures has been one of the interesting features of the last year.

3. *Public Finance*

1957-1961

(March Years)

	1957	1958	1959	1960	1961
Direct taxation	169	154	202	190	225
Indirect taxation	83	90	103	108	112
Trading income	20	22	25	27	31
Current revenue	273	267	330	325	368
Internal borrowing	42	56	31	51	61
Current expenditure on goods and services	109	114	121	129	137
Transfers	86	92	103	122	131
Subsidies	13	14	13	13	15
Revenue balance	45	25	68	35	55
Capital expenditure	72	72	70	72	76
External borrowing less repayments	10	—1	40	—5	—7
Changes in net government indebtedness Res. Bank*	3·8	22·3	—31·9	34·3	—4·2

*Net government indebtedness to Reserve Bank = Reserve Bank holdings of government securities less credit balance in Public Account.

Sources: Surveys.
Budgets.

Net government indebtedness to the Reserve Bank fell £4·2 m. in the last year compared with an increase of £34·3 m. in the previous year. This change, however, is deficient as a measure of the government's net contribution to local aggregate demand. It would

need to be corrected for external capital transactions and government import payments. It tells us nothing about the composition of local receipts (borrowing, taxation) and local expenditures (on goods or transfers). Furthermore, changes in expenditures and receipts have an importance quite apart from a net change in indebtedness; an increase, for example, in expenditures on goods matched by an increase in local receipts, leaving net indebtedness unchanged, would almost certainly add to aggregate demand.[3]

A more reliable indicator of the government's net inflationary contribution might be obtained by comparing changes in expenditures with changes in receipts. These changes could be examined at the ex post or ex ante levels. At the ex post level, *local* expenditures on goods rose by £11 m. while transfers rose by £9 m. Since the marginal propensity to consume out of transfers[4] would be close to 1, the addition to aggregate demand would have been of the order of £20 m. Current revenue, on the other hand, rose by £43 m., while the increase in net borrowing was £8 m. It would be very difficult to estimate the reduction in private consumption or investment that might have resulted from the increased receipts. This is further complicated by two facts: the first is that the whole of the increase in direct taxation of £35 m. was obtained from non-wage personal incomes (+£26 m.) and company incomes (+£9 m.). The second is that tax commitments were met by bank overdrafts to a greater extent than has been usual. Between February and April, for example, trading bank advances increased by £35 m. compared with increases of £19 m. in 1960 and £14 m. in 1959.[5] Bank accommodation in these circumstances helps to sustain the level of private liquidity. Given this, the total reduction in private demand is unlikely to have exceeded £25 m. This would mean that the budget as a whole may have reduced aggregate demand a little. In the previous financial year, additions to real expenditures and transfers amounted to £27 m. while current revenue fell by £5 m. and net borrowing increased by £16 m. When it is remembered, in addition, that the increase in net indebtedness in the previous year would have added to the liquidity of the private sector, it seems safe to conclude that the *overall* budget in the last year was less inflationary than that of the previous year.

While the above result is formally correct, an ex ante approach suggests a different conclusion. Government expenditures were budgeted to rise by about £35 m.; some portion of this increase was, however, not realised because of labour shortages and some deferments. Tax rates in operation were lower than in the previous year.[6]

[3] This, of course, is the familiar balanced budget theorem.

[4] With the exception of interest on the public debt which increased by only £2 m.

[5] These advances represent 17 per cent, 10 per cent and 7 per cent of tax payments for the years 1961, 1960 and 1959 respectively.

[6] Despite this tax receipts were expected to *rise* by £14 m. in 1961. The Government presumably anticipated some inflation in the last year.

This creates the presumption that the government budget must have added to aggregate demand in the earlier quarters of the year.[7] This would seem to be confirmed by the fact that an abnormally large portion of the increase in receipts accrued to the government in the last quarter, in response, of course, to the inflation that had developed.[8] Net indebtedness in the final quarter fell by £55·8 m. compared with falls of £26·4 m. in 1959-60 and £29·3 m. in 1958-59. Net indebtedness in December 1960 was also £25 m. higher than in December 1959, thus probably adding to private liquidity.

The 1961 budget again laid emphasis on incentives to save and invest. The main changes were reductions in estate and gift duty, certain tax allowances for farm development, the introduction of an initial depreciation allowance for farm workers' houses and other employer-built houses, an extension of the first £30 interest exemption from taxation and the abolition of excess retention tax for companies in which the public is substantially interested. This last move is perhaps not an unqualified blessing. In the absence of a capital gains tax there will now be some encouragement to avoid dividends tax by profit retention.[9] Existing legislation also tends to favour the large and old-established organisation for two reasons: one is that the smaller private and proprietary companies, which rely more on internal financing for their investment, will continue to be penalised for excess accumulation.[10] The other is that the common pool of funds on which the smaller firms or new entrants might have drawn may well be depleted by the accelerated accumulation of the larger public companies.[11] All this, however, is not to say that competition will necessarily be weakened. The search for investment outlets might even increase competition from the larger well-established organisations. Finally, increased accumulation gives a certain immunity from the effects of monetary policy (in particular capital issues controls) and this might weaken the hands of the authorities.

The Government has announced that it is examining the case for more official recognition of the short-term money market. Deposits in this market, which has grown substantially in the last 18 months, are now estimated to exceed £10 m. The immediate impact on the economy of official recognition is complicated by several unknowns. The problem, however, becomes slightly more manageable if we suppose that banks will not be allowed to participate in the market, that all funds have to be invested in government stock, that government expenditure will remain unaffected, and that shifts to the market will be

[7] The ex ante approach requires additional information with respect to policy on interest rates for internal borrowing.

[8] Tax receipts exceeded the budget estimates by £15 m.

[9] The excess retention tax was specifically introduced in 1958 to prevent avoidance of the dividends tax.

[10] There are, of course, some provisions for exemption under certain circumstances: for essential development or for expansion of plant or machinery.

[11] Monetary policy would reinforce these difficulties.

from current bank deposits.[12] In these circumstances, the drop in the demand for money at existing levels of income because of the substitution for bank deposits will increase the supply of credit on the market. On the face of it this conclusion would appear to have disturbing inflationary implications. This, however, need not be the case if the improved finance forthcoming to the government were used to repay Reserve Bank debt. A wider market for government stock, moreover, could open the way to Reserve Bank operations in securities, as has happened to a certain extent in Australia, thus providing useful indirect control on interest rates and general liquidity.

4. *Monetary Conditions*

Causes of Changes in the Volume of Money

(March Years)

(£ mil.)	1958-59	1959-60	1960-61
(a) Overseas transactions	+25·1	+22·7	−44·1
(b) Bank credit:			
1. Res. Bank advances to state	−29·0	+18·9	−4·0
2. Res. Bank marketing and other advances	−6·4	−22·9	+19·9
3. Trading bank advances and discounts	−6·7	+5·1	+51·2
4. Trading bank investments in N.Z.	—	−0.1	−0.1
5. Total bank credit 1. to 4.	−42·1	+0·9	+67·0
(c) Shift from time to demand liabilities	−4·6	−6·0	−1·3
(d) Other items	+1·6	−4·0	+7·8
Total change	−20·0	+13·6	+29·4

Source: Survey, 1961.

Liquidity

(March Years)

	1958-59	1959-60	1960-61
1. Annual average supply of money	318	333	373
Less average of government deposits (Reserve Bank)	12	10	12
2. Private average supply of money	306	323	361
3. 2. as percentage of gross national product	27	26	28
4. Average unexercised overdrafts	107	121	132
5. Average trading bank time deposits	44	44	53
6. Average small savings (including interest)	378	389	420
7. (2. + 4. + 5. + 6.) as percentage of gross national product	74	71	74
8. Yields on short-term government securities (calendar years)	4·84	4·63	4·54
Average yield 1961: March-Aug. 4·97			
9. Share prices (calendar years) (1955 = 1,000)	1,064	1,205	1,540

Sources: Reserve Bank Bulletins.
Monthly Abstracts.

[12] Shifts from investments will depend on interest differentials, which are governed by government policy, and the market's minimum deposit requirements. Movements away from time deposits which find their way into current deposits will reduce bank liquidity to the extent that reserve ratios are substantially higher on current than on time deposits.

Liquidity has, roughly, both a flow and a stock dimension.[13] The flow dimension measures the ease or difficulty of borrowing in particular periods. In the longer-run it depends on institutional facilities for bringing borrowers and lenders together, and in the shorter-run on the degree of controls being imposed. The stock dimension is more familiar. It measures the quantity and composition of the financial assets relative to the goods and services produced. The two concepts are closely related but as a first approximation it is useful to distinguish them.

Looking at the flow of liquidity first, bank advances, hire purchase credit and capital issues approvals all rose substantially in the last financial year. The rise in bank advances was £51 m., the second largest increase in the post-war years. The amount owing under hire purchase agreements, according to a survey conducted by the Department of Statistics, rose by 26 per cent between December 1959 and December 1960, as compared with 9 per cent in the previous year. Approvals for issues of new finance rose by 75 per cent in the last financial year. The substantial relaxation of controls, in the case of hire purchase in July 1959[14] and in the case of capital issues in the last budget, must have contributed to the rise in both these sources of credit.

To what can we attribute the large increase in advances in the last year? On the demand side, the biggest pressure came from heavy importing (£15 m. increase to wholesalers, importers and retailers), heavy income tax commitments (an increase of £28 m. in the month of March alone), a rise in manufacturing activity and the encouragement of local industries (£13·8 m. increase to manufacturing), and lower farm incomes (an increase of £9 m. to farming).

The supply side is more interesting. Reserve ratios were maintained at very high levels in the late months of 1960. (Between November and February the ratio for current deposits was 36 per cent.) Bank liquidity fell to very low levels after September 1960 and in November 1960 net free cash at the Reserve Bank[15] was negative. Nevertheless, bank advances continued to rise steadily. Some of the rise came from the use of unexercised overdrafts (which fell by £22 m. in March 1961 as against £10 m. in the previous year).[16] Most of the increase, however, was the result of approvals for new advances. The explanation seems to be not that the trading banks defied Reserve Bank policy at the expense of their liquidity but rather that circumstances forced the Reserve Bank to approve the increased lending.

[13] See M. Gaskin, "Liquidity and the Monetary Mechanism", *Oxford Economic Papers*, October 1960.

[14] Restrictions on hire purchase were reintroduced in April of this year.

[15] Net free cash = balance at Reserve Bank less (statutory minimum requirements + borrowing from Reserve Bank).

[16] So long as the level of unexercised overdrafts remains as high as about 45 per cent of current deposits, it will continue to provide a serious and unpredictable source of advances.

The circumstances, it now emerges,[17] were a not-too-subtle form of blackmail practised by both importers and income tax payers. According to the Reserve Bank (*Bulletin*, August 1961): "They presented their bank managers with a fait accompli—goods on the wharves and cheques to pay income taxes. The Reserve Bank agreed to payment being made in both cases." Considerations of good will (in the case of imports) and possible disruption to local industry forced the Central Bank's hand. The Reserve Bank has now affirmed that these tactics will not be allowed to prevail over monetary policy in the future.

Several measures have been taken since March to remedy the situation. The discount rate was raised from 6 per cent to 7 per cent. Selective controls (especially for imports and personal consumption) have been tightened. An arrangement was made with the banks for fuller utilisation of the existing authority to raise the average rate of interest on advances to the maximum level of 5½ per cent. The reserve ratio policy has been applied with greater rigour so as to compel the banks to borrow to a greater extent than in the past, and for some months now borrowing by the trading banks has been around £16 m. to £18 m. Finally in September this year special charges on unexercised overdrafts have been announced.

Despite all this, bank advances have remained high. (The August figure was £221 m. as against £173 m. in August 1960.) A drastic reduction in the coming months is unlikely (and undesirable) but a gradual tightening of credit should begin to be felt soon.

Looking now at the stock of liquidity, both our narrower and wider versions show a slight rise in liquidity. Private average supply of money as a percentage of gross national product rose from 26 per cent to 28 per cent while the sum of private average supply of money, unexercised deposits, trading bank time deposits and small savings, as a percentage of gross national product, rose from 71 per cent to 74 per cent. Consistent with this result is the steady fall in the yield on short-term government securities during 1960 from 4·8 to 4·37 in December. Share prices also rose on the average in the last year; however, the movement here was more ambiguous as share prices began a downward movement in the last quarter of the year.[18]

The volume of money between March 1960 and March 1961 increased by £29·4 m. A reduction of about £44 m. in net overseas assets was more than offset by an increase in Reserve Bank advances to marketing organisations of £19·9 m. and an increase in other advances of £51 m.

The balance on visible transactions changed from a surplus of £72·9 m. in 1959-60 to a deficit of £2·9 m. in 1960-61.[19] Export receipts continued at a high level, falling by only £18 m. from the

[17] See the Reserve Bank Bulletin, August 1961.

[18] The main reason for this was the greater availability of new share issues following the relaxation of capital issues controls.

[19] A deficit of this account is an infrequent occurrence.

5. *External Transactions*

Net Overseas Exchange Transactions, Overseas Assets and Terms of Trade

(Years ended 31st March)

	1959	1960	1961
1. Exports	273·6	314·2	296·6
2. Other current receipts	25·7	27·3	31·3
3. Capital receipts	56·1	11·6	17·0
4. Government imports	28·9	24·2	24·8
5. Private imports	226·9	217·1	274·6
6. Other current payments	61·7	68·7	78·1
7. Capital payments	11·6	31·2	14·8
8. Balance on invisibles	−36·0	−41·4	−46·8
9. Balance on current transactions	−18·2	+31·5	−49·7
10. Balance on all transactions	+26·4	+11·8	−47·5
11. Net overseas assets*	74·9	97·6	53·6
12. Export prices (1955 = 1,000) (calendar years)	935	907	870 (March '61)
13. Import prices (1955 = 1,000) (calendar years)	1,029	1,041*	1,017* (Dec. '60)

*Provisional.

Sources: Abstract of Statistics.
Survey.

record 1960 season. Of the major exports, there were falls in butter (£22 m.) and wool (£5 m.) and a rise in meat (£9 m.). The chief reason for the deficit was the dramatic upsurge in private import payments from £217 m. to £274 m. Internal inflation and speculative stockpiling by importers were responsible for this result on the demand side while the substantial rise in bank advances and the "liberal" issue of import licences were permissive factors.[20]

The deficit on invisibles of £46·8 m. is the largest since figures have been available (1951). This deficit has continued to grow steadily over the years from an average of £15 m. in the years 1951-54 to £24 m. between 1955-58 and £41 m. between 1959-61. The Annual Survey notes that the chief reason for the growing deficit has been a rising expenditure on travel, fares, freights and investment income from New Zealand.

The balance on current account changed from a surplus of £31·4 m. in 1959-60 to a deficit of £49·7 m. This compares with deficits of £59·7 m. in 1955 and £47.6 m. in 1958, two other bad years. Minor capital transactions reduced the current deficit to an overall one of £47·5. There was no official external borrowing.

In the financial year our net overseas assets fell from £97·6 m. to £53·6 m. The 1958 crisis had depleted reserves to the level of £49·8 m. However, the position was probably somewhat worse this year not only because of higher import requirements, and perhaps

[20] The parallel with previous election years did not escape many. Indeed the three-year cycle has now become regularly established. Increases in imports in the three previous election years were: 1952 +84·8, 1955 +56·8, 1958 +31·9. The other election years, 1947, 1950 and 1952, were also years of heavy importing.

6. *Wages, Prices and the Labour Market*

	(Calendar Years)			
	1958	1959	1960	*Latest*
Consumers' prices (1955 = 1,000)	1,104	1,146	1,154	1,163 (June Qr.)
Unemployed	785	1,188	633	535 (July)
Vacancies	7,135	5,300	6,764	9,155 (July)
Nominal (male) wage rate	1,078	1,098	1,153	1,167 (June Qr.)
Percentage rate of labour turnover (males) (April years)	18	18	19	21 (Ap. 1961)
Estimated average overtime hours worked during week (April years)	2·5	2·5	2·7	3 (Ap. 1961)
Average earnings per hour for ordinary time (April years)	6/9·7	6/11·4	7/3·7	7/7·5 (Ap. 1961)
Male labour force (April) (000)	645·6	657·1	668·4	680·2 (Ap. 1961)
Female labour force (April) (000)	204·9	208·7	212·1	221·7 (Ap. 1961)

Sources: August Abstract.
Labour and Employment Gazette (1958-61).

less favourable export prospects, but also because the level of overseas debt at £126·7 m.[21] was £23 m. higher than in March 1958.

Actual average wages in the financial year appear to have been influenced in the first half by the wage order decision in October 1959 and in the second half by the competitive bidding resulting from the acute labour shortage.

The general wage order raised nominal wages by about 5 per cent. In the last survey by the Department of Labour prior to the order (February 1958) the average ruling wage (ordinary time) was 11·3 per cent above the award rate.[22] It might be thought from this that, in view of the evidence that actual wages were competitively determined, the whole of the wage order increase of 5 per cent could have been fully absorbed by the margin. This, however, is far from conclusive. First, the survey is confined to a sample of building and engineering occupations in eight urban areas;[23] no information is available as to how many industries were actually paying award rates.[24] Second, it is perfectly conceivable that a number of employers attempt to maintain some relationship between actual and award rates. In these circumstances partial restoration of a margin could result from an increase in a wage order.

[21] Approximately £50 m. of this debt matures in the next ten years.
[22] *Labour and Employment Gazette*, November 1960.
[23] If anything, the sample would be biased in favour of high margins above award wages.
[24] In the previous survey in February 1956 when the average margin was 11·9 per cent the lowest margin was 7·8 per cent.

If we now examine the movement of average hourly earnings for ordinary time in the relevant period between October 1959 and April 1960 immediately after the order we find a rise of 3½ per cent from 7/0·7 to 7/3·7.[25] It is true, of course, that increased competitive bidding for labour might have accounted for this rise. However, it may be significant that the labour shortage, as measured roughly by the difference between vacancies and unemployed, was no worse in those months than in the same period in the previous two years when changes in actual wages were negligible. It seems reasonable to conclude then that the wage order probably had the effect of raising average wages by about 2 to 3 per cent.[26]

The second half of the financial year was characterised by an acute labour shortage.[27] All indices for the half year October 1960 to April 1961 confirm this. There is a growing gap between vacancies and unemployed (about twice that for the period in the previous year), a sharp increase in turnover from 18 per cent to 21 per cent for males and from 30 per cent to 34 per cent for females,[28] an increase in overtime from 2·6 to 3, the highest since 1957 when these figures first became available, and an increase in average earnings (ordinary) of 3 per cent. The female labour force, moreover, increased by about 9,600 in the last year compared with an increase of 3,400 in the previous year. The Annual Survey noted that "the strong demand for labour has induced many more married women to take up employment."

Notwithstanding the severe inflation that developed over the financial year, the average level of consumers' prices rose by only 1 per cent, the smallest rise since the end of the war. This was made possible by the increase of local production, the availability of imports and by lower indirect taxes on petrol, cigarettes and tobacco; these partly offset the rise in other prices, particularly for housing (4 per cent) and food (2 per cent).

7. *Prospects*

The two immediate problems facing the government are: first, how to halt the drain on overseas reserves and, second, to keep internal demand under restraint. These two problems are not, of course, unrelated.

[25] These figures for ordinary time were not available prior to 1957, a fact which complicates analysis of earlier periods.

[26] The Department of Labour suggested that "a considerable proportion" of the award wage increase was passed on in the form of "fixed amounts paid regularly each week" rather than through a change in the base rate. Their last survey in July 1960 indicated that if these fixed amounts are excluded the margin over the award rate is reduced from 12·6 per cent to 10·6 per cent. However, in the absence of comparable figures in previous surveys, it is not possible to use this as evidence that the actual wage increase took this form.

[27] The biggest shortage appears to be in the building industry where vacancies as a percentage of full-time employees were 5 per cent as against an average for all industries of about 3 per cent.

[28] Higher figures for turnover have never been recorded.

Despite the addition to our reserves of £18 m. of a £20 m. loan recently raised in London, these reserves in the middle of September stood at £53 m. The immediate outlook for exports is not bright. There has been a steady decline in the price of lamb on the London market since March and butter has been selling at the low price of £250 per ton since February. Nor have the additional import restrictions imposed in April last[29] yet made any serious impact. Up to July private imports continued to be substantially above last year's high levels. Not only has overseas borrowing thus become essential, but it also seems likely that the Government will need to realise, probably at losses, on London securities (nominally worth about £28 m.) to ensure that funds will be available to meet overseas commitments.

Taking a longer view of the external problem, we find that despite the existence of varying import restrictions in recent years the current account has been in deficit every year, except 1960, since 1954. By how much the demand for imports would drop if excess demand were removed is, of course, not known, but it is highly likely, on the above evidence, that at full employment levels New Zealand is suffering from a fundamental disequilibrium. Future developments will depend largely on export receipts, estimates of which are complicated by agricultural policies overseas, the extent of competition to wool from synthetic fibres, the growth in the standard of living in underdeveloped areas, the initiative with which the search for export markets is pursued and, finally, most important, the possibility of Britain's joining the Common Market. It seems safe to predict that in the immediate years ahead import restrictions are not likely to be seriously relaxed unless deflationary measures are pushed vigorously, or the currency is devalued. A continuing level of unemployment resulting from vigorous deflation would be wasteful and, of course, politically unacceptable. The firm opposition now also expressed by the Monetary and Economic Council to devaluation as a solution, largely on the ground of the uncertainties attached to the outcome,[30] would now appear to have ruled out this proposal.

To what extent will internal demand need to be contained in the coming months? The deflationary forces at work are the low levels of current and past farm incomes, the effects of restrictions on both hire purchase and bank credits and, perhaps, to a mild extent, the levels of stocks. The importance of the latter has, however, been exaggerated. Taking all stocks into account (including those for primary produce processing industries) their value was £317·871 m. on the 31st March

[29] In April the import licensing system was tightened; licences were extended over 18 months, the replacement category of essential imports (for which increases had been freely granted) was abolished and other imports cut.

[30] Ironically, the administration of import licences in recent years has been such as to create considerable uncertainty as to the outcome in the way of imports. (This is an argument, of course, for the reform of the licensing scheme.) Moreover, the import replacement policy pursued in recent years, because of the immediate demands it makes on capital, has to a certain degree created the same uncertainty.

1961 compared with £295·88 m. in the previous year. Expressed as percentages of gross national product the rise was from 24 per cent in 1959-60 to only 24·3 per cent in 1960-61.[31]

On the other hand, inflationary forces are likely to predominate. First, with a budgeted increase in expenditures of at least £17 m.[32] and tax rates remaining unchanged it seems likely that the government will be making further contributions to aggregate demand. Second, as supplies of imports drop sharply there will be additional demands on local production. Third, private capital formation will have been further stimulated by a rise in profits after tax in 1961 which exceeded the rise in the previous year. Finally, the decision by the Dairy Prices Authority this year to fix the price for butter and cheese at the same level as the previous year will mean that growing deficits in the Dairy Produce Account will be met by Reserve Bank and Government advances,[33] in this way adding to private liquidity.

It is probable, then, that some restraint on demand will be required. What form should this restraint take? The government will presumably give priority to two considerations in making this decision. The first is that the restraint should be shared fairly widely by industry (the avoidance of structural unemployment).[34] The second is that the impact should preferably fall on consumption rather than investment. If this is correct, then monetary measures alone would be quite unsatisfactory. If carried far enough they tend to fall quite heavily on individual industries; moreover, they may curtail investment to an undesirable degree. It would seem that resort to supplementary fiscal measures might well be necessary. *Temporary* increases in indirect taxes *on a wide range of goods* have the advantage that they reduce aggregate demand to a greater extent than *equal yield* increases in income taxes and are also less likely to fall on investment. It is true, of course, that indirect taxes by raising prices may create demands for increased wages, but the effects of general wage orders on actual wages are uncertain. Some part, moreover, of an increased income tax may well be passed on by businesses and there is always the possibility that increases in income taxes could also become the basis for higher wage demands.

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[31] A large proportion of the increase in stocks appears to be in imported goods. This will be important from the standpoint of the continuity of local production when the supply of imports begins to fall off in the coming months.

[32] Since then some cuts appear to have been made in public works expenditure.

[33] Such deficits are, of course, required to be liquidated from subsequent surpluses, but the outlook for butter at the present time is such that it is by no means certain that these surpluses will eventuate.

[34] The suggestion by the Monetary and Economic Council that some taxes should be levied on commodities with a high import content should accentuate the difficulties already anticipated for these industries.

RADCLIFFE MONETARY THEORY[1]

In an earlier article in this journal, I attempted a brief review of what seemed to me the important features of the Radcliffe Committee's Report.

In the course of this earlier paper (which was written before the Minutes of Evidence became available) I argued that:

"The Committee cannot be accused of failing to present a consistent and identifiable theory logically developed from the work of Keynes".[2]

A search of the literature on the Report suggests that this judgment would be regarded by many commentators as perverse or wrongheaded.

In my earlier paper, the discussion of the Radcliffe "model" was unavoidably and extremely brief. The primary purpose of this paper is to offer a more elaborate, and it is hoped more convincing, treatment of the same issue. In short the aim of what follows is to set out, in greater detail, the structure of Radcliffe Monetary Theory.

Acceptance of Radcliffe Monetary Theory does not, let me add, imply acceptance of Radcliffe Monetary Policy. Logically, the propositions which I shall identify as R.M.T., are not uniquely related to the recommendations which constitute R.M.P. Indeed there is some evidence to suggest that those who accept R.M.T. find themselves disappointed with R.M.P. while conversely those who are satisfied with R.M.P. not infrequently feel called upon to take a severely critical line over R.M.T.[3]

II.

Any summary statement of the propositions which constitute R.M.T. must, because it *is* a summary, be selective. It may therefore be controversial. The central theoretical propositions of R.M.T., at least so far as the short-run is concerned, seem, however, to be these:

(a) the objective of monetary policy is to influence aggregate demand;[4]

(b) neither investment nor consumption expenditures are very responsive to the cost or incentive effect of higher interest rates;[5]

(c) the level of aggregate demand, however, does depend on overall "liquidity";[6]

[1] I am indebted to Professor W. Armstrong and Mr. E. B Butler of the University of Southampton and Mr. J. M. Fleming of the University of Bristol for many helpful criticisms of this paper. They are, of course, not responsible for its errors.

[2] D. C. Rowan [16].

[3] Cf. for example A. E. Jasay [6] and M. Gaskin [3].

[4] Radcliffe Report (Cmnd. 827) H.M.S.O., 1959, henceforth cited as Report, paras. 382-3, 397.

[5] *Report*, paras. 450-453, and 397 (c) and (d).

[6] *Report*, paras. 397 (d) and 981.

(d) the money supply is only part of the whole structure of "liquidity";[7]
(e) overall liquidity for institutional reasons depends upon the whole structure of interest rates;[8]
(f) the structure of interest rates rather than the quantity of money is therefore the centrepiece of monetary action;[8]
(g) the manipulation of the structure of interest rates can be encompassed by a "suitable policy";[9]
(h) debt management forms an important part of any "suitable policy".[9]

The decisive questions raised by this summary seem to be these:

(i) what is the meaning of "liquidity"?
(ii) in what way does "liquidity", whatever it is, respond to the manipulation of the rate structure?
(iii) how is the structure of rates to be manipulated?
(iv) what part, if any, does the control of the money supply play in the manipulation of the rate structure?

It is to these four questions that I shall try to suggest consistent answers.

III.

The concept of "liquidity"—as employed by the Radcliffe Committee—is nowhere precisely defined. This is a circumstance which has given rise to much criticism. We begin therefore by a discussion of the meaning of this concept. Before doing so, however, we may point out that in R.M.T. the term "liquidity" is employed in a sense broader than that usually found in the literature. It is, indeed, the very breadth of the Radcliffe definition which has led to much of the recent dispute over the meaning of the term.

To begin at the beginning, liquidity is the attribute of an asset. All assets are liquid. Some, however, are a good deal more liquid than others. Money, by definition, is perfectly liquid. Hence the liquidity of any asset depends upon:

(a) the speed with which it can be converted into money;
(b) the degree of price certainty attaching to the conversion;
(c) the capital certainty attaching to the conversion.

Certain assets—a savings bank deposit at the Post Office Savings Bank can be regarded as a typical example—are contractually defined in terms of the unit of account. They therefore possess complete price and capital certainty. Since they can also be encashed with a very little delay, they are correspondingly close substitutes for money. Let us call them "near-moneys".

Other claims, which are *not* encashable, are nevertheless marketable. The degree to which they possess attributes (a) and (b) thus

[7] *Report*, paras. 388-390, 395 and 397 (d).
[8] *Report*, paras. 393-395, 397 (g), 982.
[9] *Report*, paras. 562, 603, 982.

depends upon the perfection of the market in which they are traded.[10] The possession of attribute (c) depends upon the stability of the prices in the market.

Since all assets possess each attribute in some degree, only a cardinal measure of liquidity would enable us to reach a single figure for the liquidity of an individual's asset portfolio.[11] The common procedure is to overcome this difficulty by ignoring it. This is done merely by asserting that an asset is either liquid or not. Once this step has been taken we have an arbitrary definition of the liquid asset holding of an individual. This holding can be valued, at market prices, and a unique total calculated. We can call this the "liquid asset holding" of the individual.

Aggregation of these totals over all individuals and enterprises raises two problems. The first is that, although a single asset owner can liquidate *all* his assets, the community cannot. The second is that, since the assets of one man, in the form of financial claims, are some other man's (or institution's) liabilities, summation of claims over a closed community inevitably produces an accounting total of zero.

The first of these points is of little practical importance. Admittedly if the community should attempt to liquidate the whole of its liquid asset holdings even the most strenuous action on the part of the lender of last resort might not prevent the collapse of the very market organisations on which liquidity depends. But in the context of R.M.T. this is a trivial point since what concerns the Committee is the consequence of the ability to undertake *marginal* rather than wholesale shifts out of liquid assets into money.

The problem of how far aggregation can reasonably be carried with respect to financial claims is a difficult one and the proper answer to it may well vary with the nature of the problem being studied. For example, the familiar definition of the money supply as the stock of legal tender *plus* demand deposits in the hands of the non-bank public is, in some discussions of the "cash-balance" effect, felt to entail too *wide* a range of aggregation. Accordingly it is replaced by a definition which assumes that variations in the real value of inter-indebtedness *within* the private sector do *not* affect behaviour while, conversely, variations in the real value of the net indebtedness of the public sector to the private sector *do* affect behaviour.[12] On such an assumption the quantity of demand deposits included in the private sector's money holdings is defined to be equal to the value of the commercial banks' holdings of public sector obligations while the "cash-balances" of the private sector include its net holdings of public debt. Whether such a definition is appropriate or not, in relation to the "cash-balance" effect, is a matter which does not, in this context, concern us. We are, however, concerned with the problem of

[10] H. Makower and J. Marshak [10].

[11] *Report*, para. 478.

[12] Cf. Don Patinkin [12]. It should be noted in the *Report* itself, para. 478, Table 22, a figure for personal deposits is given which is *net* of advances.

the range over which, for the purpose of R.M.T., aggregation of financial claims is reasonable. The "cash-balance" illustration is introduced merely to show that there is no ready-made solution to hand.

My own view is that, in the context of R.M.T., aggregation of financial claims is reasonable and proper over a very considerable range. For as we shall see the criterion which R.M.T. emphasizes is the ease with which any given type of asset can be converted into money. In such a context the method of aggregation advocated for the "cash-balance" effect is obviously inappropriate. To give even a "reasonably" precise definition of the proper range of aggregation in the context of R.M.T. is a complex matter to which I hope to return in a later paper. Provisionally, however, let us define the stock of liquid assets in the possession of the private sector (excluding financial institutions) to consist in:

(a) holdings of "money" as conventionally defined;
(b) holdings of readily marketable or encashable obligations of the public sector;
(c) holdings of readily marketable or encashable obligations of financial institutions.

Given this, admittedly arbitrary, definition of "liquid assets" the overall liquid assets position of the private sector becomes, in the short-run, dependent on the whole range of interest rates and yields and on the degree of "perfection" of the market in the various types of claims we choose to include.

To fix our ideas let us now assume, what is patently not true, that the stock of each type of claim outstanding is fixed and invariant. That is, no new claims can be created. On this no doubt extremely artificial assumption, how could variations in the "liquid asset" position of the private sector influence expenditure?

IV.

The central proposition of R.M.T. in this issue can be derived from the following quotation:[13]

> "Spending is not limited by the amount of money in existence; but is related to the amount of money people think they can get hold of, whether by receipts of income (for instance from sales) by disposal of capital assets or by borrowing."

In itself this statement is ambiguous for it does not distinguish between two routes by which changes in liquidity (as we have defined it thus far) may influence spending. A simple example may help to make this issue clear.

Expenditure, plainly enough, depends upon both the decision to spend and the ability to do so. Both *may* be influenced by liquidity as we have defined it. Thus there are two possible routes through which liquidity—or more strictly in our present model changes in

[13] *Report*. para. 390.

the liquid asset position—may influence spending. Let us consider each in turn.

One version of the first proposition is that real planned expenditure, out of any given real income, depends in a systematic way upon the real value of asset holdings. If assets are interpreted to mean financial assets, this amounts to writing the real expenditure function for (say) the household sector as:

$$E_h = f(Y_h, F_h, L_h)$$

where E_h denotes real expenditure, Y_h real disposable income, F_h the real value of financial asset holdings and L_h is a parameter reflecting the "liquidity" of the financial asset portfolio. For example in linear form we might write,

$$E_h = H + a_h Y_h + b_{1h}\frac{M_h}{P} + b_{2h}\frac{A_{1h}}{P} + b_{3h}\frac{A_{2h}}{P} + \ldots . b_{n+1h}\frac{A_{nh}}{P}$$

where a_h = households' marginal propensity to spend in real terms out of changes in real income

b_{1h} = households' marginal propensity to spend out of changes in the real value of households money balbalances;

$b_{2h} \ldots \ldots b_{n+1h}$ = marginal propensities to spend out of changes in the real value of the various types of financial assets held by households;

$A_{1h} \ldots \ldots A_{nh}$ = households' holdings of various types of liquid assets ranked in order of "liquidity";

M_h = nominal value of households' holdings of money;

P = price level.

If we also assume that $b_{1h} > b_{2h} > b_{3h} > \ldots \ldots b_{n+1h}$ then this function states that households' real expenditure, out of any given real income depends upon:

(a) the real value of the portfolio of financial assets including money;

(b) the liquidity of the portfolio.

Formally, this looks like an extension of the "cash-balance" effect to become a "financial assets" effect. But this is not so for the "cash-balance" effect operates only in disequilibrium situations and is therefore restricted to dynamic models.[14] Our formulation, on the contrary, can be given a static interpretation as a somewhat restricted version of the proposition that household expenditure depends not only upon real income but also the real value of household wealth. It becomes a "liquidity effect" only if the values of $b_{1h} \ldots . b_{h+1h}$ are correlated with the "liquidity indexes" of the various forms of claim.

Now clearly enough, provided $E_h < Y_h$, the "liquid-asset" effect described here influences expenditure *only* through its influence on

[14] G. C. Archibald and R. G. Lipsey [2].

the *willingness* to spend. For if $E_h < Y_h$ (strictly for all households) the finance of expenditure presents no problem. Assets do not have to be sold to obtain cash to finance spending—income provides this automatically. It is, indeed, only proper to call this a "liquid asset" effect because we have assumed $b_{1h} > b_{2h} \ldots \ldots b_{n+1h}$. The consequence of increased liquid asset holdings is, to put matters otherwise, completely mandatory: households want to spend more and since there is nothing to stop them (if $E_h < Y_h$) they can and do. The *ability* to spend—that is to obtain finance—is not at issue.

Our assumption regarding the ordering of the $b_{1h} \ldots \ldots b_{n+1h}$ coefficients is not, at least as a first approximation, particularly convincing. Possibly the liquid asset position does influence the willingness to spend apart from its effect upon the real wealth position. But this is certainly not yet established. Moreover, this does not seem to be the type of "liquid-asset effect" visualized in R.M.T.[15] [16] For the Committee clearly regards the "liquid-asset" effect as operating, at least primarily, through its influence on the ability to spend. A single quotation must suffice. The Committee puts it thus:[17]

> "if the money for financing the project cannot be got on any tolerable terms at all, that is the end of the matter."

My reading of the Report on this crucial issue can therefore be summarised by saying that the central proposition of R.M.T. can be paraphrased as follows:

> "The greater the holding of liquid assets, then the more 'tolerable' the terms upon which intending spenders may obtain any given amount of additional active balances."

Alternatively we could say that the elasticity of supply of active balances in relation to the "terms" on which they can be obtained is directly related to the liquid asset position. What is meant in this context by the phrase "tolerable terms" clearly requires further examination. We discuss this problem later in the paper.

This reading of the Committee's views has two consequences. In the first place changes in the liquid asset position are important not because they change the desire to spend but because they influence the ability to spend. Emphasis on the latter approach does not, of course, imply exclusion of the former. It does suggest, however, that the liquid asset position is of consequence mainly for those groups who plan to spend in excess of current receipts.[18] In the second place our interpretation of R.M.T. implies that what is important in determining the level of expenditure is the availability of finance rather than the rate of interest and that the latter, if important at all, derives its significance from its role as a determinant of the former.

[15] *Report*, paras. 387, 389, 392-396.
[16] It may, however, be the type of "liquid asset" effect implied by Patinkin.
[17] *Report*, para. 387.
[18] *Report*, para. 310, makes this point explicitly.

This view of the role of the stock of existing liquid assets, once accepted, can readily be extended to the "overall liquidity position". For if we relax our convenient, but unrealistic, simplifying assumption that the stock of financial claims is fixed, we need to recognise, as R.M.T. so clearly does, that one way of obtaining finance is to create and sell new liabilities. Still looking at the matter rather formally we can say that the "overall liquidity" of potential spenders consists in:

(a) their holdings of existing financial assets: "old" liquidity;
(b) their unused borrowing powers: "new" liquidity.

The introduction of this second component destroys any possibility of "overall liquidity" being a concept capable of precise numerical calculation. Admittedly figures for some unused borrowing powers (i.e. unused overdraft facilities and the loan value of life policies) could, in principle, be obtained. But these could scarcely be aggregated since not all unused overdraft facilities *could* be used. Arithmetic measurement of "overall liquidity" is, therefore, out of the question. This does not, however, mean that the concept is unimportant. Depending as it does upon not only the value and composition of the existing stock of financial claims ("old" liquidity) but also on an assessment, which can scarcely be precise, of the current attitudes of lenders, particularly institutions, and the current capacity of potential borrowers to meet the criteria of "credit worthiness" applied by lenders ("new" liquidity), it is clearly very complex. Nevertheless it is almost certainly possible to distinguish situations in which "overall liquidity" is greater or less: that is to make ordinal estimates. And these estimates must, it can scarcely be doubted, actually be made if monetary policy is to be successfully conducted.

Whether it was wise of the Committee to use the term "liquidity" in this way is a matter which may reasonably be disputed. There can, however, be little objection to the propositions from which the concept derives. On our arguments these are as follows:

(a) the ability to spend is not circumscribed by the amount of money an individual possesses;
(b) it is circumscribed by the amount he can get hold of on "tolerable terms";
(c) the "terms" on which an individual can obtain money will be more tolerable the greater:
    (i) his holdings of existing "liquid" assets;
    (ii) his unused borrowing powers;
    (i.e. the greater is his overall liquidity)

hence

(d) the elasticity of supply of active balances is a function of the community's overall liquidity.

Provided it is agreed that the concepts of "liquid assets" and "unused borrowing powers" are capable of ordinal estimation, this

summary seems acceptable. It might, indeed, be accepted by a number of writers who have regarded R.M.T. with suspicion. The summary, however, is only at the most a first step in the work of clarification. We will have to enquire what is meant by "tolerable terms" or, to put much the same point slightly differently, in terms of what economic variable or variables is the elasticity of supply of active balances to be defined. These questions have, of course, a close bearing on the logical *consistency* of R.M.T. for, as we have already seen, it is a proposition of R.M.T. that neither savings nor investment are significantly interest elastic in the short-period. "Intolerable terms" which (by definition) check borrowers, cannot mean "high interest rates"—for that would imply the very interest elasticity of investment which is decried. In other words, having rather laboriously defined overall liquidity we must enquire upon what variables, according to R.M.T., it depends. Our enquiry, let it be noted, is essentially concerned with the short-run aspects of the problem.

V.

As we have seen it is necessary, in order to preserve the logical consistency of R.M.T., to assign a meaning to the phrase "tolerable terms" which differs from "acceptable interest rates". For, if "terms" meant "interest rates", R.M.T. could be reduced to the following propositions:

(a) the high interest elasticity of the supply of active balances permits wide variations in expenditure at a small increase in interest rates;
(b) attacking the whole liquidity position would reduce this interest elasticity; hence
(c) making the terms of borrowing—hitherto tolerable—now intolerable at least for some marginal borrowers.

Clearly propositions (b) and (c) only make sense if, over some reasonable range, investment demand is interest elastic. This point is made clear in the accompanying demand and supply diagram.

The demand for loanable funds consists in investment *plus* hoarding. Taking the money supply as given, the supply consists in savings plus dishoardings. Assume initially that the system is in full equilibrium with savings equal to investment. If now, because of some "real" cycle the investment schedule shifts to I^2, as long as it is, as R.M.T. asserts, very interest inelastic, it is clear that elasticity of the hoarding/dishoarding schedule scarcely affects the result. If, alternatively, the investment demand schedule (Fig. ii) *was* interest elastic, then reducing the elasticity of the hoarding schedule (by attacking liquidity) *would* matter. Figs. (i) and (ii) thus illustrate, in formal terms, the logical dilemma outlined earlier. From this dilemma there seem to be two related ways of escape.

In the first place our formulation, like most diagrammatic constructions, considerably oversimplifies the problem. For example it

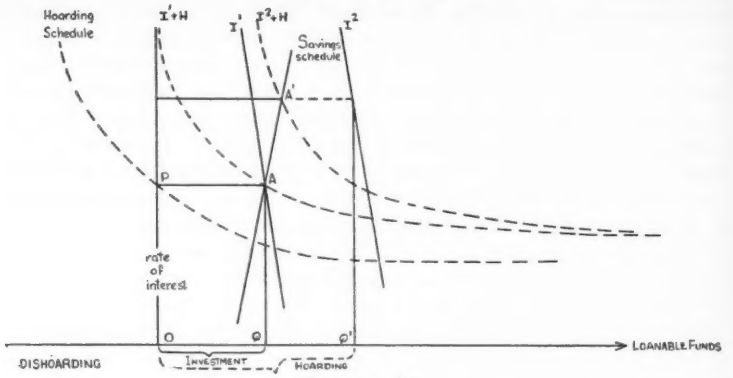
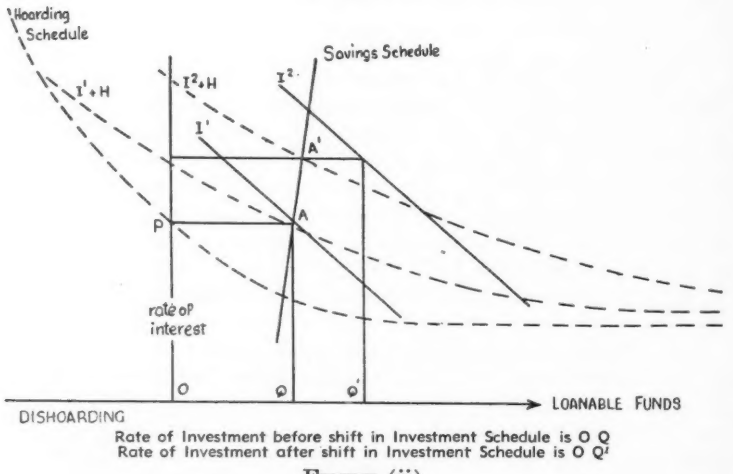


FIGURE (i)



Rate of Investment before shift in Investment Schedule is O Q
Rate of Investment after shift in Investment Schedule is O Q'

FIGURE (ii)

implicitly assumes, what is certainly not the case, that even in the short-run the capital market is a single indivisible whole. Since this is not so, the *mechanism* whereby active balances are supplied to investors consists of a number of distinct sub-markets imperfectly related to each other and in many cases given to the allocation of funds by rationing rather than price. Equilibrium demand and supply analysis is therefore misleading since there can be no guarantee that, taking the position as a whole, demand and supply are in any short-period brought into equilibrium.

The sources of these imperfections are to be found on both the demand and supply side of the market. And on the supply side in particular there are, in any short period, marked gaps in the range of substitutes. Admittedly, if one wishes, any difficulty arising out of the denial of access to "traditional" sources of finance which leads

to the postponement of an investment project can be described as the operation of the "cost" effect of interest and thus adduced as evidence of interest elasticity. For example cases have occurred in the U.S.A. where small business men, unable to increase their bank borrowings, have had recourse to "Shylock" loans for which the usual terms are $1 per month for each $5 borrowed—a rate of rather more than 240 per cent per annum. To say that a business man confronted by such a rate who postpones investment has an interest elastic demand schedule is no doubt legitimate. But most people would regard it as misleading. It is more useful to think of the investment as being prevented by the imperfections of the market particularly since the degree of imperfection is, to a considerable extent, susceptible to official manipulation.

The second escape from the contradiction revealed in the diagrams is along essentially similar lines. On the vertical axis of Figs. (i) and (ii) is plotted "the rate of interest". This, of course, is merely short-hand for "the whole complex of rates". Once this is realised it is clear that there may not be one dishoarding schedule passing through P but a whole family of schedules each one reflecting, at given values of "the rate of interest" (in terms of some index number), a different *structure* of rates. Changes in the rate structure imply a shift from one of these curves to another—or in formal terms—a shift in the dishoarding schedule. If the shifts in each sub-market are appropriate, and a significant number of sub-markets ration funds, investment expenditure may be restrained without the resultant excess demand for funds manifesting itself as rising interest costs.[19]

This second argument, which is stressed in the Report, is really the heart of the matter. It serves to remind us that movement along the dishoarding schedule is not simply a process whereby some individual, or enterprise, parts with idle balances (in exchange for a financial claim) and in doing so hands them *directly* to a potential spender, but more commonly a process through which some intermediary obtains hitherto idle balances (by selling a claim to the dishoarder) in order to make a loan of the same amount to a potential spender. It is, in fact, an institutional process. It can, therefore, only be understood by examining the behaviour of those institutions whose operations most significantly influence it. The Radcliffe Committee's theoretical proposition on this point is that the structure of rates can be manipulated so as to modify the policies of the financial institutions through which, in considerable measure, the dishoarding process manifests itself. More specifically, it is a proposition of R.M.T. that "a rise in rates makes some less willing to lend because capital values have fallen and others because their own interest rate structure is sticky".[20]

[19] One symptom of a disequilibrium of this type is a sharp increase in attempts by small businesses to raise funds through newspaper advertisements.

[20] *Report*, paras. 389, 392-393.

At first sight this doctrine appears to be paradoxical. Clearly if *all* lenders became less willing to lend when interest rates *rose* (and presumably *more* willing when interest rates *fell*) dishoarding would be *inversely* related to the rate of interest. But this is not what is asserted. Many transactions do involve a direct movement out of money into the financial claims issued by spenders.[21] These no doubt exhibit the usual form of interest elasticity. All that is being asserted is that some institutions are deterred, by an increase in the relevant rates, from lending as much as they otherwise would have done. In the aggregate for all lenders including institutions, the supply of loanable funds is doubtless a function of interest rates of the form traditionally assumed.

On these arguments R.M.T. can be preserved from the reproach of inconsistency if the following propositions are accepted:—

(a) the capital market exhibits imperfections on both the demand and supply side;
(b) some sub-markets ration funds;
(c) while we are always on the supply curve for loanable funds we are not always on the demand curve.

For the short-run, though not for the long, the Radcliffe Committee accepted these propositions. From them can be developed, along familiar lines, a theory of monetary control which, while assigning a crucial role to *interest rates*, rests only to a very limited extent, and that principally in the longer run, on the existence of an interest elastic investment demand schedule. Such a theory can be constructed to be consistent. Whether it is a useful theory, in the sense of providing the monetary authorities with a means of exacting a sufficient degree of control over aggregate demand is, of course, a separate issue.

On these arguments, the characteristic contributions of R.M.T. seem to be two. In the first place R.M.T. implies that, in the short-run, the operation of monetary policy cannot be analysed by a simple macro-static model of equilibrium. In the second place R.M.T. suggests that the role of the structure of interest rates is important not because, in the short period, high interest rates restrict demand but because rising interest rates restrict availability. Both contentions are familiar. The former recognises the existence of market imperfections and implies that in significant sub-markets the rationing process is such that, where planned borrowings exceed planned lendings, it is lenders whose plans are carried out. The latter emphasizes the role of financial institutions in the process of dishoarding. Taken together these two propositions imply that where the money supply is sufficient to finance a value of gross national product many times the current level, what matters for the conduct of short-term monetary policy is not the magnitude of the money supply, however de-

[21] *Report*, para. 125. A similar view is repeated in paras. 312, 315-317. But compare para. 319.

fined, but the institutional process through which observed income velocity is increased.

VI.

It is obviously legitimate, from a theoretical point of view, to argue that if the money supply (however defined) is sufficient to finance a G.N.P. several times the current level, what matters for monetary policy is the institutional process by which the income velocity of the money stock is increased. The relevance of the contention is, however, an empirical matter. In this section therefore we make a very brief digression in order to give a short account of the evidence.

Arguing on the simplest of Keynesian lines observed income velocity[22] may be increased in either of two ways. The first is by an increase in the income velocity of active balances—a shift in the function relating active balances to aggregate expenditures.[23] The second is by the transfer of funds from idle tc active balances. In the case of most increases in velocity, both probably occur. Which is the more important is a matter of fact not theory. Leaving this problem aside we may, however, proceed on the simplifying assumptions that:

(a) active balances are a simple proportionate function of money income; and (b) the proportion is itself invariant with respect to interest rates.[24]

These are, in fact, the assumptions made by Dr. Khusro[25] in his empirical study of liquidity preference. Using multiple regression methods Khusro obtained an estimate of 6.71 for the velocity of circulation of active balances. If we apply this estimate to the data from 1949-1960 we can obtain estimates of idle balances from the simple relation:

$$M_2 = M - M_1$$
$$= M - \frac{Y}{6.71}$$

This information, together with measures of observed income velocity, is set out in Table I.

The data in Table I are not in any way refined. They do suggest, however, three conclusions:

(a) the money supply (defined as legal tender *plus* demand deposits) is sufficient to finance a level of national income be-

[22] We define observed income velocity (V_y) thus:

$$V_y = \frac{\text{National Income}}{\text{Money Supply}}$$

The *Report* is critical of this concept cf. paras. 392-3 and 523.

[23] Cf. N. Kaldor [7] who argues that the income velocity of active balances is in fact a variable which adjusts to increases in expenditure.

[24] This is probably to oversimplify matters. Cf. A. H. Hansen [4] and J. Tobin [17].

[25] A. M. Khusro [8]. This study is also quoted by M. Gaskin [3] in a similar context.

TABLE I

National Income, Money Supply, Idle Balances and Income Velocity

(United Kingdom)

Year.	National Income	Money Supply	Income Velocity	Idle Balances	£ sterling Percentage changes on Previous Year of: National Income	Money Supply	Income Velocity
	£ m.	£ m.		£ m.	%	%	%
1949	10,208	5,178	1.98	3,656	—	—	—
1950	10,710	5,223	2.04	3,626	4.9	0.9	3.9
1951	11,720	5,386	2.18	3,641	9.3	3.1	6.3
1952	12,727	5,277	2.42	3,377	8.8	—2.0	11.0
1953	13,607	5,400	2.51	3,260	6.9	2.3	4.6
1954	14,580	5,629	2.63	3,459	7.1	4.2	2.9
1955	15,416	5,711	2.70	3,421	5.7	1.4	4.3
1956	16,698	5,698	2.93	3,215	8.3	—0.02	8.5
1957	17,635	5,747	3.07	3,123	5.6	0.8	4.8
1958	18,341	5,674	3.21	2,965	4.0	—1.3	5.3
1959	18,931	6,033	3.14	3,212	3.2	6.0	—2.8

Notes: Money Supply = Currency in circulation *plus* Demand Deposits of London Clearing Banks.
Idle Blances = Money Supply *minus* Active balances calculated from Khusro's relation.

tween twice and four times the levels experienced during the past decade;

(b) increases in observed income velocity have, for every period but 1953-54, made a greater contribution to the increases in national income than increases in the supply of money (as defined);[26]

(c) on the basis of Khusro's estimate of the velocity of active balances, it is also clear that both the absolute and percentage decreases in the holdings of idle money required to finance the expansion of income have been small save possibly in the years 1951-2 and 1955-6.

The first and third of these conclusions would, of course, be strengthened if it could be shown, as Kaldor has suggested, that the income velocity of active balances is itself a variable which systematically adjusts to any increased demand for such balances.

This evidence, though crude, and clearly requiring more careful and systematic investigation, thus supports R.M.T. in so far as it is the contention of R.M.T. that it is the nature of the dishoarding process which is crucial for the conduct of monetary policy. To put the same conclusion slightly differently: if idle balances, even on a strict definition which confines them to demand deposits alone, are in fact held on the scale Khusro's work suggests, control of the money supply as such loses much of its direct importance. For there is no

[26] For a similar comment on the experience of the U.S.A. consult J. Angell [1].

direct causative link between the stock of money and the flow of expenditure.[27] This does not, however, mean that the money supply is unimportant. What matters, as we have seen, is the institutional process of dishoarding. It may well be that manipulation of the stock of money is an essential ingredient in any attempt to control availability and thus the dishoarding process itself. Since it is a proposition of R.M.T. that "liquidity" can be influenced by manipulation of the structure of interest rates, it is clear that in R.M.T. itself, the money supply is by no means an unimportant variable.[28] It is to this proposition that we shall now turn our attention.

VII.

As we have seen, potential spenders may obtain finance in either of two ways:

(a) selling an existing capital asset—on our interpretation usually an outstanding financial claim of high "liquidity";
(b) selling a newly created financial liability.

The former process involves the sale of existing financial claims which have, since otherwise they would scarcely be regarded as "liquid", well established markets. The latter process involves the sale of newly created liabilities either to institutions directly or to a distinct part of the market—namely the "new issues" market. It is obviously a matter of fact—not theory—which of these two methods of financing increased expenditure is the more important.[29] Equally obviously the answer to this question which is applicable in one period of expansion may not be applicable in another. In this paper we are concerned primarily with theory. Let us consider, therefore, the second route to obtaining finance—the creation and sale of new liabilities.

New liabilities are commonly sold to:

(i) banks—the corresponding banking asset being "advances";
(ii) non-bank financial institutions—usually in the form of new share or debenture issues;
(iii) the public—usually in the form of new share or debenture issues;
(iv) other enterprises—resulting in the extension of trade credit.

In what follows we shall disregard trade credit which, though important, requires separate analysis, and concentrate on the first three possibilities.[30]

[27] Cf. R. F. Kahn. *Minutes of Evidence.* Vol. 3 pp. 138-146, particularly paras. 60-68

[28] *Report,* paras. 389-393, 397 (f) and (g).

[29] From the available evidence it seems that only in 1955 and 1956 were reductions in liquid assets by quoted companies of the same order of magnitude as a source of finance as new issues. *Report,* paras. 479-482 and Table 21. On this problem consult also S. J. Prais [14] and [13] and the references there cited.

[30] Quantitatively for the sectors for which series exist, trade credit is of considerable significance. Cf. *Report,* paras. 297-311.

If newly created claims are to be sold to the banks, and the volume of bank deposits is fixed, the banks must undertake a switch from investments to advances. Bonds are sold by the banks to the public, which extinguishes some idle deposits, and advances made to businesses which creates active deposits. A similar process may occur with other financial institutions. Institutional "switches" are, therefore, one route by which idle balances may be activated. Since such "switches" necessarily involve the sale of existing claims, the ability of enterprises to sell "new" claims is at least in part dependent on the willingness of financial institutions to sell "old" claims.

In restraining such "switches" (in situations other than those classified as "emergencies")[31], R.M.T. relies upon what, in other places, I have called the "availability" effect. If we take the simplest case, that of banks, the operation of this can be illustrated as follows:

Let r_a be the rate of bank advances;
and r_g be the rate ruling on the government securities from which the banks would need to switch.

In the initial situation, which is assumed to be one of equilibrium, the supply curve of advances is SS. The slope and position of the curve depends on the relationship between the existing advances ratio and the banks' conception of a "normal" or "proper" ratio, the value of r_g, and the total of bank assets.

Now assume an increase in the demand for advances—a rightward shift of the demand curve to D_1D_1. As the banks seek to *increase* advances beyond OA, "switching" must occur. Accordingly the banks will sell securities and move along SS to a new position of equilibrium. If the "switching" process is massive no doubt there will be some tendency for r_g to rise. But this may be quite small and we shall ignore it.

Suppose now the authorities bring about an autonomous increase in r_g. The supply curve shifts to the left since the level of r_g is a parameter of the curve. If the banks are not sensitive to capital losses then if the rate on advances rises to r'_a the quantity of advances offered will be the same as in the original equilibrium. On this assumption the new supply curve will be S_1S_1, the new equilibrium price r''_a.

If, however, banks are, as is often suggested, peculiarly sensitive to realized capital losses[32] since "switching" will now entail some such losses, the new supply curve will be S_2S_2. If this is the relevant curve then even at r'_a the volume of advances supplied will be reduced. In the most general formulation this requires that expectations regarding the future level of r_g be inelastic. In the case of financial institutions holding dated bonds this condition seems cer-

[31] *Report*, paras. 520-529.

[32] Cf. Minutes of Evidence. Q.3601-3611, Q.3744-3750, Q.3853-Q.3868. In practice, of course, "switching" entails losses only if it exceeds, in any period, the value of securities maturing for redemption.

tain to be satisfied since a realised capital loss can be avoided merely by holding to maturity. The result is a reduction in the supply of advances to OA_2 from OA_1 and a rise in the advances rate to r''_a. This is illustrated in Fig. (iii).

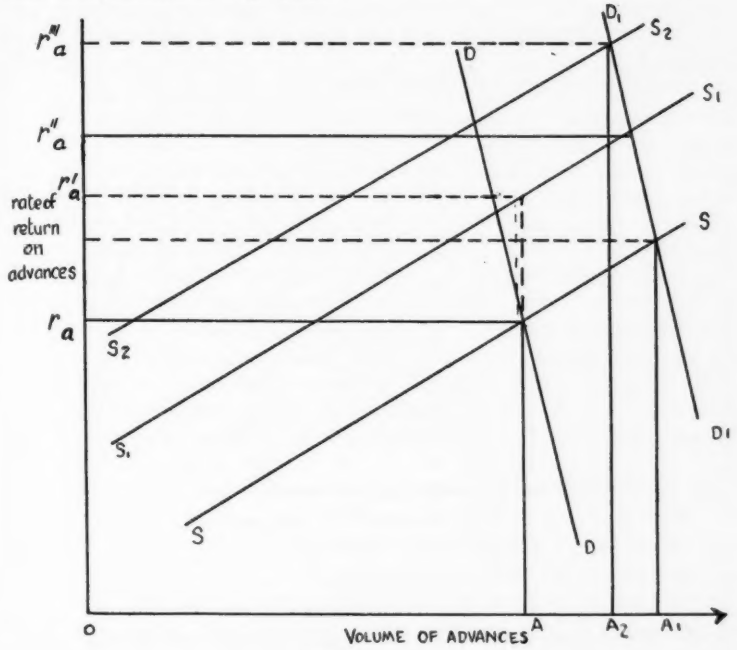


FIGURE (iii)

So far we have proceeded on the simplifying assumption that the market for advances is equilibrated by price. In practice this is not so. Hence r_a may not rise to r''_a but to $\bar{r}_a$. Advances, in other words, are rationed and the new position, illustrated in Fig. (iv) is one of excess demand for advances. Where, in our diagram, the proportion of excess demand has risen, what has occurred is an increase in the degree of imperfection in the market for bank loans.

This "locking-in" or "availability effect" is part, at least, of the rationale of the Report's statement that "a rise in rates makes some less willing to lend because capital values have fallen". The failure of r_a to rise to r'_a (in Fig. iv) is an example of its further comment, "and others because their own rates are sticky".

We have, thus far, explained the leftward shift in SS by a substitution effect, caused by a rise in r_g, and an assumed distaste for realised capital losses on the part of the banks. The rise in r_g also imposes paper capital losses which may exert some influence. If to

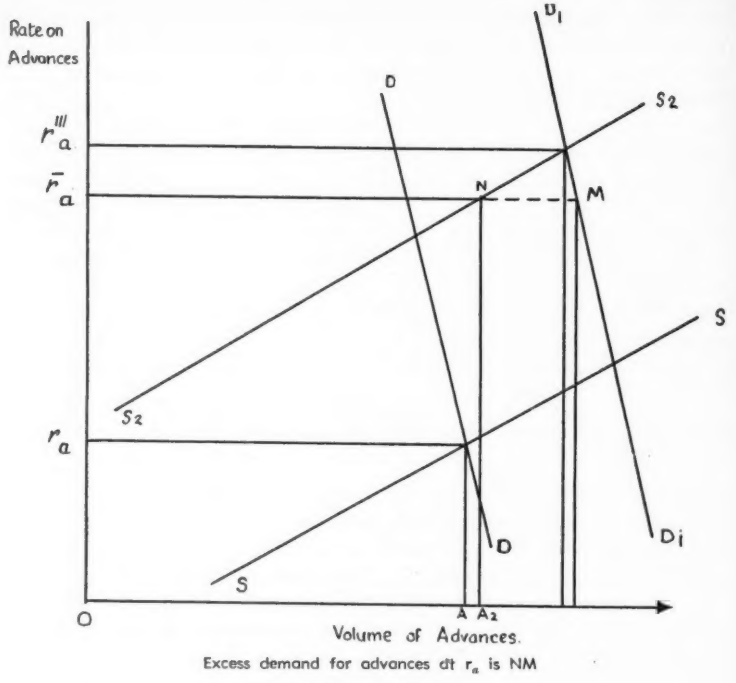


FIGURE (iv)

these three influences is added the additional uncertainty which may be created in lenders' minds by an officially instigated increase in r_g we have the essentials of the theory of monetary control put forward some years ago by R. V. Rosa.[33] Rising rates are a substitute for high rates in the sense that rising rates can, it seems, restrict the supply of funds from financial intermediaries sufficiently to make it unnecessary to raise market rates to levels which would cause the postponement of expenditure by borrowers. R.M.T., therefore, amounts to the proposition that, by a judicious manipulation of *the rates to which critical institutional lenders are sensitive*, the authorities can reduce the availability of funds from such sources and therefore, *a fortiori*, what we have called the "new" liquidity in the system.

Suppose for a moment this theory is not only logically correct but empirically useful.[34] If potential spenders find, as a consequence of official action, that they cannot—on "tolerable terms"—sell newly created liabilities can they not still finance themselves by selling exist-

[33] R. V. Rosa [15].

[34] By "useful" I mean that a "worthwhile" reduction in availability can be attained by a "practical" increase in rates. The Radcliffe Committee argues that this condition is not satisfied. *Report*, paras. 487-493.

ing financial claims which they hold as assets—that is "switch" themselves?

Clearly, to the extent that enterprises possess readily marketable assets *in excess of their minimum requirements* these can be sold. But rising interest rates impose a capital loss on sale which is avoidable if the securities are held to maturity. Moreover the readily marketable financial assets held by enterprises are not inexhaustible. Some, no doubt, are held as an alternative to cash as a form of "liquid assets" reserve. "Switching" out of such assets into real assets must impose a reduction in the liquidity of the balance sheet. As long as enterprises are marginally dependent on institutional finance, access to which requires, amongst other things, at least a *minimum* degree of balance-sheet liquidity, the risks of prejudicing access to institutional finance may inhibit sales. And in so far as rising interest rates increase uncertainty,[35] enterprises themselves may feel increased need for a liquid position. This is not to suggest that enterprises have developed, as banks have done, rather firmly held conventions with respect to "liquid asset ratios". It is, however, to suggest that the same type of reasoning may apply, though with far greater flexibility in the relevant ratios. Thus enterprises may be inhibited from selling financial assets by considerations quite distinct from cost in the sense of interest forgone.

If enterprises could sell existing financial assets—but do not—does this mean that, in contradiction to R.M.T., the investment demand schedule is interest inelastic? This question seems largely one of semantics. The theory of investment, as a first approximation, pictures the enterprise as comparing the internal rate of return with some relevant market rate of interest. Where capital losses are involved in the sale of securities, and the securities are dated so that capital losses *can* be avoided, the psychologically *effective* rate of interest may be above the market rate. Any deferment which results can be regarded as evidence of the cost effect of interest denied by R.M.T. but to do so seems to be straining the ordinary use of language. In any case this dispute is not about what happens but how what happens is to be described—and this is a matter of secondary importance.

To sum up. It is the essence of R.M.T. that, provided that appropriate rates are moved, the elasticity of supply of active balances to potential spenders may be somewhat reduced. Whether a significant degree of reduction can be achieved is a separate issue on which the Report itself is extremely sceptical.[36] All that R.M.T. suggests is that an appropriate interest rate policy—which means a selective policy—can in principle make a contribution through the operation of the "availability" effect.

[35] This is a point on which some evidence exists. Cf. H. F. Lydall [9].
[36] Cf. footnote (34) above.

VIII.

According to our interpretation it is the contention of R.M.T. that monetary control in the short run operates primarily through restricting the availability of institutional finance and, to achieve this objective, a movement in the whole structure of interest rates is essential.[37] How then does the monetary authority operate upon the structure of rates?

In the simplest of models the structure of interest rates is determined, at any moment of time, by:[38]

(a) the preferences of asset holders;
(b) the expectations of asset holders regarding future rates;
(c) the quantities of the various types of debt in existence;
(d) the money supply.

Apart from (a)—which is outside the authorities' control—the remaining three variables are all susceptible to official influence. Provided the preferences of asset holders are not subject to severe and unsystematic changes, it would appear that the authorities, assuming that they have a clear idea of the rate structure which they want, possess the necessary means to attain it.[39] It follows that debt policy, which can be used to influence the structure of debt outstanding, becomes a matter of major importance. As the Report puts it,[40]

> "... monetary action and debt management interact so that they ought to be under one control: they are one and indivisible."

Following this line of thought it is clear that if the whole structure of interest rates is "the centrepiece of monetary action", the money supply must, given the structure of indebtedness, be adjusted in whatever way is necessary to obtain the desired interest structure. The money supply is not, therefore, an unimportant variable. The central point here is remarkably simple and much of the controversy surrounding it seems to have been misplaced. If the debt structure and the expectations of asset holders are given, then the authorities can control either the structure of rates or the money supply but not both. If, as R.M.T. asserts, the strategic variable is the structure of rates, the money supply must be adjusted accordingly. The Report itself seems, in places, to have been unnecessarily provocative on this issue. On examination, however, it seems that the Committee's position follows directly from the proposition, which we have already discussed, that there is no direct and stable connection between the *stock* of money and the *flow* of expenditure. The connection, which may not be very precise, is through the structure of rates which in

[37] An alternative procedure is, of course, a complex system of administrative controls over availability.
[38] Cf. R. A. Musgrave [11].
[39] Cf. R. F. Kahn's evidence to the Radcliffe Committee. *Minutes of Evidence*, Vol. II Q.10981-10994.
[40] *Report*, para. 603.

the short-run influence availability and in the longer run plans to invest.

In the simplest theoretical models it is common to overlook the influence which the authorities may exert on the expectations of asset holders. There can, however, be little doubt of the authorities' capacity to influence short rates, and a number of other rates traditionally related to Bank Rate, without varying the money supply. In other words the authorities can and do exert leadership at the short end of the rate curve. If the habit of official intervention, and "taking a view", was extended throughout the rate curve, there is no reason to suppose that this leadership might not spread. This appears to be what the Committee would like to see.

IX.

The aim of this paper has been the very limited one of setting out an account of what might be called the "short-run" version of R.M.T. In our view this aspect of R.M.T. is not only logically consistent but also familiar.

As discussed in this paper the theory is qualitative and not quantitative. What matters in practice is not the qualitative validity of the "availability effect" but its quantitative significance. About this the Radcliffe Committee had strong reservations, so strong, in fact, that it assigned a relatively minor role to monetary measures in the short-run control of aggregate demand—which implies, given some notion of a "real" cycle, that fiscal policy and administrative controls must bear the brunt.[41]

Radcliffe Monetary Policy is consistent with our qualitative formulation of R.M.T. but requires, in addition, the following assumptions:

(a) quantitatively speaking short-run control along the lines of R.M.T. is not likely to prove effective;
(b) an extension of administrative controls over financial institutions is not on balance desirable; hence
(c) short-run control must be conducted primarily by means of fiscal and administrative devices;
(d) these devices will be sufficiently effective in "normal circumstances"; hence
(e) the various devices considered by the Radcliffe Committee as offering ways of improving the prospects for short-run monetary management can be kept in reserve for "emergencies".

Clearly the greater one's scepticism about (a), (b) and (c) the greater one's doubts about the wisdom of (d) and (e). Equally clearly it is perfectly reasonable to accept R.M.T. while rejecting R.M.P.

[41] *Report*, paras. 487-493, 507-508 and 511.

At a theoretical level it is difficult to quarrel with R.M.T. Perhaps the term "liquidity" was used in too broad a sense and perhaps the reduction in the status of the money supply was done in too provocative a way. But many of those who would criticize the Committee on these grounds would not deny the empirical propositions on which, at bottom, R.M.T. relies. This is not very surprising for, if my interpretation of R.M.T. is valid, the core of R.M.T. consists in two statements:

(a) the existing supply of money in the U.K. is sufficient to finance a value of G.N.P. many times the current level; and
(b) where this is the case it is not the money supply *per se* but the institutional facilities, which influence the conversion of idle money into active money, which matter in the short-run.

Only when the supply of idle balances and encashable "near moneys" approximates to zero can a simpler approach to short-run monetary management become useful.

To assert that short-term R.M.T. is both logically consistent and familiar is not to say that it is correct. A good deal of further research is necessary into the nature of the institutional process which encompasses the activation of idle balances. This research might well establish that, as Kaldor has suggested, the income velocity of active balances is itself a variable which automatically adjusts, at least in part, to increases in expenditure. Alternatively it may be found, as some writers have argued, that there is a relationship between changes in the money supply and changes in availability more important than that through the influence of interest rates. If this should prove to be so, short-run monetary policy might well be more effective than the Report suggests—and by the same token the money supply a more important variable.[42] But convincing evidence on these points has yet to be adduced. It is indeed one of the services of the Radcliffe Committee to have raised these—and other—issues in a way calculated to stimulate research.

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THE "EXCESS COSTS" OF A TARIFF AND THEIR MEASUREMENT*

I. *Introduction*

The Report of the Government-sponsored enquiry into the Australian tariff, published in 1929,[1] contained two major contributions to tariff theory. The first was concerned with the effects of the tariff on the interal income distribution and has been discussed elsewhere.[2] The second contribution was concerned with the cost of the tariff. This latter problem is the subject of the present article, which is partly in the nature of a progress report. Originally, there seemed to be little need for such an undertaking as, in 1957, there had been published an exceedingly well documented and thought-provoking article by W. M. Corden.[3] Since that time, however, developments in the theory of the cost of protection have been rapid. They have, in addition, paved the way for conclusions and practical policy recommendations which may have to be regarded with some measure of caution. The time for reflecting upon tariff matters is opportune because pressure has been brought to bear recently, both by the Tariff Board and by the Australian Chamber of Commerce, in the direction of another investigation into the Australian policy of tariff protection, perhaps along the lines of The 1929 Enquiry.[4]

II. *The Excess Cost Issue Prior to the War*

We may begin with a brief outline of the discussion of the issue of the excess cost of protection prior to the second world war. This historical approach seems justified because recent writings on the subject of the cost of the tariff have a strong and direct link with the ideas contained in The 1929 Enquiry; in turn, several of the main

* This article is a somewhat condensed and modified version of a paper presented at the A.N.Z.A.A.S. Conference in Brisbane, in May, 1961.

[1] The full title of the Report is: *The Australian Tariff—An Economic Enquiry*, by J. B. Brigden, D. B. Copland, E. C. Dyason, L. F. Giblin and C. H. Wickens (Melbourne University Press, 1929). This may be referred to as "The 1929 Enquiry" The reporting Committee is sometimes referred to as the "Brigden Committee"; their way of measuring the "excess cost" as the "Brigden method".

[2] A. J. Reitsma: "Trade and Redistribution of Income—Is There Still an Australian Case?"*The Economic Record*, August, 1958. Also, more recently, my *Trade Protection in Australia* (University of Queensland Press, 1960), Chapter V.

[3] W. M. Corden: "The Calculation of the Cost of Protection", *The Economic Record*, April, 1957.

[4] That the step taken by the Bruce-Page Government in the late twenties was unusual and politically courageous was commented on in 1929 by the well-known American economist Jacob Viner. It is further illustrated by recent Canadian experience. In that country, in 1957, there were published the findings of a Royal Commission on Canada's economic prospects. However, the Commission disassociated itself from one of its excellent staff studies dealing frankly with the problem of Canadian protection. The study concerned is by J. H. Young, *Canadian Commercial Policy* (Ottawa, Royal Commission on Canada's Economic Prospects, 1957.)

ideas which can be found in The 1929 Enquiry were already contained in Brigden's celebrated article in the very first edition of *The Economic Record*.[5] The tariff, according to *Brigden*, entailed a cost, but this cost was offset, to some extent, by the avoidance of production under "diminishing returns" and by more favourable terms of trade. Also, it was made worthwhile by a more desirable distribution of income, an aspect which, although given major emphasis by both Brigden and the Brigden Committee, shall not be dealt with here. With respect to the cost of the tariff Brigden said: "The cost of protected industry must be recognized; indeed it must be insisted upon." He also said: "The next step is to compare the inevitable costs of tariff regulation, as far as they can be guessed at." However, Brigden, in 1925, did not make any attempt to measure statistically the cost of protection.

This problem of the actual cost of protection was dealt with elaborately and in a novel and rather daring fashion in *The 1929 Enquiry* which was therefore in this, as in other respects, a follow-up of suggestions made by Brigden in 1925.

The technique used, in The 1929 Enquiry, of measuring the cost of protection, may be explained briefly as follows. The "cost", referred to in The 1929 Enquiry as "excess cost", consisted of the excess of the market value of the protected output over the cost of equivalent imports. For the purpose of roughly measuring these excess costs the authors of The 1929 Enquiry divided protected home production into three classes, according to whether the contribution of imports to the total of the goods consumed was high or low. Where imports contributed a substantial proportion of the quantity of any particular good consumed, the excess cost was calculated on the basis of the full amount of the duty. Where imports were relatively small, the excess cost for a class of good was calculated on the basis of half the amount of the duty. Where much of the output was naturally sheltered, the excess cost was put at one-third of what the application of the full-duty formula would yield. It is clear from the foregoing that The 1929 Enquiry regarded the excess cost of the tariff as measurable in principle. The method used was that of multiplying the volume of home-produced protected output by the full or a fraction of the duty levied on these goods. The excess cost thus found amounted to £36 million on a total value of protected production of £150 million. The calculation was on the basis of all production using existing protection. However, the authors realised that at a lower free-trade price and cost level some industries, formerly protected, might become competitive. This potentially surviving industry, which they estimated to represent £75 million worth of protected output, they found to carry only £8 million of excess cost, leaving £28 million excess cost of output needing protection under all circumstances. This led the authors to

[5] J. B. Brigden: "The Australian Tariff and the Standard of Living", *The Economic Record*, November, 1925.

estimate the amount of export production required to provide equivalent employment as being £47 million (£75m. — £28m.) on the assumption that both export and import-competing industry would employ equivalent numbers of workers for the change-over under consideration.

The methods of the Brigden Committee were commented on by *Viner*,[6] [7] *Loveday*[8] and *Reddaway*[9]. Viner and Reddaway mainly criticised the Committee's assumption of unchanged real wages. Loveday criticised the implied assumption that a duty has no other effect than to increase the price thus abstracting from different demand reactions for different goods. He was critical of the whole idea of measurement whereas neither Viner nor Reddaway seemed to query the attempt at measurement as such.

III. *Developments Since the War*

To the writer's knowledge, not much was added to the discussion of the concept "excess cost" in the twenty years between 1937 and 1957. The concept was briefly mentioned in 1955, in an *United Nations* publication.[10] In 1955, also, the original method of measuring "excess cost" was again used by *Dr. Vernon* who tendered evidence with the Tariff Board in support of a request for protection by industry. Dr. Vernon, who claimed to have used the Brigden method based on statistics for the year 1951-52, concluded that the level of tariff assistance had been falling steadily for the last twenty-five years. Whereas the Brigden Committee had found that the cost of manufacturing industry represented 24 per cent of free trade prices (page 49 of The 1929 Enquiry), Dr. Vernon contended that in 1951-52 this cost was only 12 per cent.

The *Tariff Board* was critical of both Dr. Vernon's statistics and of the use of the Brigden method. With respect to the latter it referred to the "acknowledged defects of these methods".

J. H. Young was, I think, the first to apply the excess cost approach outside Australia. His estimates with regard to what he calls the "cash cost" of the Canadian tariff were published in 1957.[11] This "cost", according to Young, can be estimated either from the expenditure side or from the production side.

Measured from the expenditure side, a comparison is made between the amount spent on purchasing the products of protected

[6] Jacob Viner: "The Australian Tariff—An Economic Enquiry", review article in *The Economic Record*, November, 1929.

[7] Jacob Viner: *International Economics*, No. 11, "Memoranda on Commercial Policy", 1936 (The Free Press, Glencoe, Illinois), pp. 166-167.

[8] A. Loveday: "The Australian Tariff: A Criticism". A letter published as a Note in *The Economic Record*, November, 1930.

[9] W. B. Reddaway: "Some Effects of the Australian Tariff", *The Economic Record*, June, 1937.

[10] U.N.: *Processes and Problems of Industrialisation in Under-Developed Countries*, (1955), page 67.

[11] *Op. cit.*, Part III and Appendix A.

industry and the amount which the same quantity of goods would have cost if Canadians had been able to purchase freely in foreign markets. Alternatively, says Young, looked at from the production side, the cash cost of the tariff for a particular industry is the amount of extra money payment which accrues and remains in the industry. This latter amount can be estimated, according to Young, by first comparing prices and determining the amount which the industry receives for its final products over and above the amount which it would have received if the goods had been sold at world prices. From this amount, says Young, a deduction must be made for any duties paid on imported inputs, and a further deduction for any extra amount paid for inputs purchased from other protected industries. Young made his own estimates of the "cash cost" of Canadian protection generally from the expenditure side. As Young points out, his method of comparing prices at home and abroad differs from the method used by the Brigden Committee in Australia. The Brigden Committee, as we saw earlier, used tariff rates, after making allowance for the importance of imports in the consumption of particular goods. Price data were used in Australia as a check on the estimates thus obtained rather than as a point of departure. It should be mentioned that Young omitted Government purchases from his estimates. He also stresses that the year chosen by him, 1954, was one of low output. He therefore regards his estimates as too low.

In Australia, in 1957, it was *W. M. Corden* who reintroduced the discussion of the excess cost concept. Corden set out to show that by taking the difference between the market value of protected output and the cost of equivalent inputs, as did the Brigden Committee, we may overstate the cost of the tariff. Corden, in his analysis, uses assumptions which differ from those made in The 1929 Enquiry, in keeping with the suggestions made by Viner, Loveday and Reddaway. For example he does not assume that real wages remain the same irrespective of whether we have a tariff or free trade. Neither does he assume that changes in relative prices have no effect on the demand pattern. Corden divides the cost of protection into a consumption cost and a production cost. The former is the cost of the tariff due to distorting the consumption pattern by unduly raising the price of protected goods to the consumer. The latter is the cost of choosing to produce the protected output at home rather than importing it. With the help of the concepts of consumers' and producers' surplus, using partial equilibrium analysis, he shows that the Brigden method, although not allowing for the consumption cost, may overstate the production cost. Such an overstatement occurs if we assume increasing cost in the industry concerned. It would disappear if either constant costs were assumed or if average instead of marginal cost was taken into account. Realizing that the partial equilibrium approach has only limited application, because it cannot take into account either indirect effects at home or terms of trade effects with respect to the

outside world, Corden looks in a more general way for other possible sources of over- or under-statement of cost by the Brigden method. It is obvious that allowance must be made for any possible favourable shift in the terms of trade. It is also possible, says Corden, that the costs as calculated may contain elements of rent, thus overstating the true costs. For example, if labour is relatively more scarce in the protected industry it may receive a higher wage than under free trade. Diminishing physical returns in the export industry, says Corden, may cause this to happen even if the import-competing industry operates under constant costs.[12] Finally, there may be what Corden has called a "volume" effect leading to an overstatement of cost. Such a general effect, says Corden, may occur if balance of payments adjustment or maintenance of full employment required a further cost reduction, making import-competing industry more competitive. By ignoring this possibility, he says, the Brigden method could possibly overstate the volume of output in need of protection.

Corden's proposition is that the traditional way of estimating the cost of protection is likely to lead to an overstatement of such cost. Although this might seem a logical development, it remains a big step to move from this proposition to the more recent suggestions that the cost of protection is normally likely to be low. Such suggestions have come from two economists of world-wide repute, Arnold C. Harberger and Harry G. Johnson.

Arnold C. Harberger, in 1959, used a different approach to the problem of measuring the cost of protection.[13] He did so in a paper where he explored the possible result of eliminating misallocation of resources in economies like Chile, Brazil and Argentina. As one source of such misallocation he discussed substantial barriers to foreign trade.

His method of estimating the welfare cost of a tariff is basically as follows.

He takes it that in Chile the trade restrictions are equivalent to a 50% *ad valorem* tariff. He says that in Chile the foreign trade sector is sufficiently small (some 10% of national income) to allow him to employ "Marshallian methods" without serious error. He assumes initially that Chile has no influence over the world price of either her exports or her imports. He then continues to argue as follows: "With a 50 per cent tariff, the marginal dollar's worth of exports will buy import goods worth $1.50 internally; on the first dollar's worth of expanded exports, accordingly, the net gain is $.50. On the last unit

[12] It should be realised, however, that to demonstrate this point beyond doubt rigorous assumptions must be postulated along the lines of those made in the well-known Stolper-Samuelson paper. See Wolfgang E. Stolper and Paul A. Samuelson: "Protection and Real Wages", *The Review of Economic Studies,* November, 1941. Also in *Readings in the Theory of International Trade,* The American Economic Association (1949), no. 15. The assumptions are listed and discussed in my *Trade Protection in Australia,* pp. 81 ff.

[13] Arnold C. Harberger: "Using the Resources at Hand More Effectively", *The American Economic Review,* May, 1959, pp. 134 ff.

of expanded trade following the elimination of the tariff, the net gain would be zero. Our measure of the welfare cost of a 50 per cent tariff is then a triangle whose altitude is $.50 and whose base is the number of dollars by which exports (and imports) under free trade would exceed their levels under the tariff." Harberger assumes that in Chile trade would not more than double as a result of the introduction of free trade. The base of his triangle is therefore not more than the present dollar value of exports, i.e. some 10% of national income. Hence the welfare gain from abolishing the tariff would be no more than 2½% of national income (the area of the triangle).

The most recent contribution to the theory of the cost of protection was made by *Harry G. Johnson* in 1960.[14] The main purpose of Johnson's paper is, he says, to reformulate the theory of tariffs in order to specify a method of measurement of the cost of protection. In doing so he begins by following to a large extent Corden but then proceeds to an analysis strongly influenced by Harberger's work. Johnson first uses the familiar general equilibrium approach (2 goods and a combination of production and consumption indifference curves in the one diagram) to show how the cost of protection can be illustrated in terms of the goods that could be extracted from the economy in a free trade situation without making the country worse off. This diagram illustrates the consumption and production effect as well as the terms of trade effect. Assuming next that there is no terms of trade effect he switches to a partial equilibrium approach. In his diagrammatic treatment there is only one export good, one import good and a single tariff rate[15] but Johnson extends it to an algebraic treatment of the case of a country producing a multiplicity of goods. In order to rule out the complications of changes in the relative prices of untraded goods he assumes that those complications cancel out or that non-traded goods are negligible in importance. Another assumption is required to rule out the complication that there may be substitutions between imports and domestic goods and among domestic goods. Due to taxes or imperfect competition domestic goods may carry a margin of price over cost so that a decrease in consumption reduces welfare (the value of consumption forgone, says Johnson, is greater than the resources released for imports). To avoid this complication he assumes that on average the excess of domestic price over cost is no greater for domestic goods than for the imports which replace them. On these assumptions, says Johnson, the measure of the cost of protection becomes the sum of the measures for the individual goods. He admits,

[14] Harry G. Johnson: "The Cost of Protection and the Scientific Tariff", *The Journal of Political Economy*, August, 1960.

[15] His diagram measures along the X-axis quantity of "importables" and on the Y-axis the price of these "importables" in terms of exports. The supply curve is defined as "the general equilibrium supply curve (the transformation curve, expressed as a relation between relative prices of importables and the quantity of them produced domestically)". The demand curve is defined as a constant-utility demand curve ("compensated" demand curve or "marginal valuation curve").

however, that even on these assumptions the measure of production and consumption cost of protection in an actual economy would require a "major statistical effort, involving econometric analysis of both demand and cost functions for at least the major goods produced and consumed". Although actual measurement poses a great problem, Johnson's findings lead him to believe that it is possible to show that the production and consumption cost of protection, taken as a proportion of national expenditure, is likely to be low. These conclusions, he says, follow from the nature of his cost formulas, together with the general empirical observation that tariff rates in force are almost invariably fractions, usually running below 50% and the fact that statistical estimates of elasticities of both consumption and import demand have generally produced low figures. The consumption cost of the tariff, says Johnson, is likely to be a small proportion of the national income because its calculation involves multiplying together for each commodity four fractions, of which one is $\frac{1}{2}$ and the others are likely to be substantially under $\frac{1}{2}$. This will be so, he says, unless high elasticities of demand, high tariffs and a high proportion of expenditure on imports all go together. However, the production cost, according to Johnson, may be large, because one of the three factors to be multiplied, viz. the proportion of real cost (non-rent) in the excess of domestic over foreign value of domestically produced importables may be as large as unity. Production cost, says Johnson, may be an appreciable part of national expenditure if large sections of domestic output are heavily protected and if little of the excess of the internal over the external price of the product is accounted for by rent. However, he thinks that normally the tariff as a proportion of the final price will be small and that there is likely to be some economic rent in the costs. He says that this expectation is confirmed by the findings of both the Brigden Committee and Young. The former estimated the cost of the Australian tariff at 6% of the national income. The latter came for Canada to $3\frac{1}{2}$-$4\frac{1}{2}$% of gross private expenditure net of indirect taxes.

IV. *Some Comments*

So far we have done no more than outline the various contributions to the theory of the cost of protection, hoping that in a desire for brevity we have not failed to do justice to the far more detailed, elaborate and frequently important contributions concerned. This outline clearly shows the considerable stimulus given to the development of the theory by Australian writings. It also shows some tendency to place increasing stress on the possibility that in the past the cost of the tariff may have been overestimated. If it can be believed that the cost associated with even a considerable tariff will normally be low in terms of the nation's income, this has important policy implications. It could be argued that even if the tariff does not help, it will not hurt much. There would be little good reason for the increasing uneasiness in Australia with regard to high protection as a permanent policy. A

general acceptance of the notion that a tariff does not cost much could lead to a more ready application, to a greater inclination to give in to protectionist pressure when politically convenient and to a lessening of the urge to induce already protected industry to reduce costs. This would mean a complete change of attitude towards tariff-making as developed in Australia through the institution of the Tariff Board and the principles on which that Board operates. It is because recent developments in the theory of the cost of protection may lead to such important changes in attitude that an outline of those developments seemed opportune.

We may now turn to some comments on practical application. In these comments we shall first confine ourselves to the static framework in which the theory was traditionally presented.

Corden's views—with regard to possible policy implications—may be summarized as follows. First of all, he stresses that in practice there is no way of measuring the consumption cost of protection. With regard to a possible terms of trade effect Corden points out that we do not know the elasticities of demand and supply of exports, although he does not rule out a favourable effect of a tariff on the terms of trade. With respect to the indirect effects of the tariff on import-competing industries Corden states again that these are not measurable. With his partial equilibrium approach Corden recognizes and abides by the limitations of such an approach. He clearly states the assumptions and confines himself to the analysis of the effect of a tariff on a relatively unimportant import good. He comes to the conclusion that this approach is the most promising one, provided measurement is carried out on the basis of average costs and not prices but stresses that it cannot yield us more than the approximate cost of one particular industry. We cannot thus calculate the cost of the tariff as a whole. However, we could get from the partial equilibrium approach orders of magnitude to indicate which particular protected industries cost the community relatively more.

We may now look at the size aspect of the possible overstatement in the Brigden method to which Corden has drawn attention. There is in the first place the production effect in the import (protected) industry where the loss in consumers' surplus may be partly offset by producers' surplus. This depends on the slope of the supply curve in Corden's diagram. If we may assume constant cost in the import-competing industry, an assumption which Corden himself regards as reasonable, the overstatement of costs disappears. Next there is the production effect in the export industry, consisting of the possibility that the factor relatively most used in the protected industry may receive an income transfer from the factor relatively more used in the export industry, thereby raising the cost of protected goods above their true cost.

Elsewhere[16] I have argued that we cannot be sure of such a re-

[16] *Trade Protection in Australia*, Chapter V.

distribution of income in the case of Australia, even on static assumptions. Corden, however, is of a different opinion and gives this effect a plus sign indicating an overstatement of costs by the Brigden Committee. Two possible sources of overstatement remain. One is the terms of trade effect. I agree with Corden that this may be neglected on the import side in the case of Australia. I feel also that, given time for complete adjustment at home and abroad, not too much should be made of this effect on the export side. What about the second remaining source of overstatement, Corden's "volume effect"? Although Corden gives his "volume effect" a plus sign, he himself admits that after removal of a tariff full employment and balance of payments equilibrium *might* be restored without any change in money factor prices or the rate of exchange.

It would seem, to the present writer, that Corden's approach, within a static framework, is illuminating and basically sound. Perhaps the only criticism is that for those not familiar with The 1929 Enquiry it may not have been made sufficiently clear that some of the effects which Corden himself regards as non-measurable were elaborately discussed by the Brigden Committee as offsetting factors. We may think here for example of the terms of trade effect and the redistribution of income problem. Also, constant cost in the import-competing industry was very much implied in their reasoning. If some of the overstatements of cost in the Brigden method seem of doubtful or little importance, there remains the fact that they could not include the consumption cost of the tariff. Corden himself, although cautious, regards it as a reasonable guess that the various indirect effects are of greater importance than the consumption effect, so that the Brigden method then overstates the cost. However, as we have seen, we cannot be at all sure of that and it is equally possible that the costs are understated by the Brigden method.

We may now turn to Harberger, whose practical conclusions carry him considerably further than Corden by suggesting that the cost of a tariff will normally be small. Harberger's findings rest on the following assumptions:

1. That the foreign trade sector is small enough to employ Marshallian methods without serious error;
2. That the expansion of trade following a removal of trade restrictions is limited in scope because of fairly low elasticities of import-demand and export-supply;
3. That some uniform *ad valorem* tariff can be made to represent all trade restrictions in existence;
4. That a reallocation of resources under free trade would not alter existing production functions in each line of activity.

The last assumption means that the whole problem is dealt with within a static framework, an aspect to which we shall return later. With regard to the third assumption it should be observed that a uniform *ad valorem* tariff is not the same as a variety of trade restrictions in-

cluding different tariff rates for different goods even if, by assumption, the total value of imports is the same under both systems. A uniform tariff level may interfere less with consumer choice and hence lead to a smaller reduction in welfare. To take this into account we may have to assume a level of uniform *ad valorem* duties (an "equivalent tariff" in Harberger's expression) which is considerably higher than that which would reduce the value of imports to the same extent as an existing variety of restrictions. Harberger, although recognising the problem and admitting that there is a difference in "welfare cost" under the two systems, regards this as unimportant.

Harberger's feeling that responses of import demand and export supply to changes in price are limited in scope needs careful consideration, especially since Harberger is an expert in this field. It must be remembered, however, that the discussion moves from a situation with the tariff to one of free trade. Elasticities with trade restrictions (presumably the ones actually measured) are bound to be lower than the ones without the restrictions. This is so because the tariff will have caused the buying of only the most needed imports, i.e. the ones with the least elastic demand. It would seem also that Harberger, when speaking of the probable and required size of the elasticities, has in mind the short run. He assumes that a removal of the tariff would lead to a 20% devaluation of the currency. This assumption seems fair enough if a whole tariff were removed overnight. However, this is hardly the real problem. The real problem is what tariff policy may cost the community after it has been in operation for a considerable time. To link flexibilities with respect to such long run changes with a possible need for short run adjustment in the case of a sudden change may well be confusing and lend a downward bias to estimates of likely responses in the economy. The whole of a protective tariff will never be taken off overnight and we must really think in terms of plenty of time for a very gradual adjustment. The most important assumption is, I think, the first one, which is made to justify the application of a partial equilibrium approach to the problem of the effect of a tariff on the whole economy of the nation. Harberger's gain to be derived from free trade may be thought of as the sum of Corden's consumption and production cost. However, consumption and production cost were arrived at by Corden in a partial equilibrium diagram under stringent assumptions. His demand curve was defined as a constant utility curve, assuming, therefore, that total income remained the same. Whereas such an approach is perhaps justifiable when we consider a relatively unimportant import good, when the whole trade sector is involved it becomes a much more doubtful procedure because then, in a calculation of the possible effects of a tariff on total income, we use a technique which must assume that total income does not change. It would seem that the partial equilibrium method thus used has a downward bias in calculating possible benefits to be derived from abolishing a tariff because we start from a utility level under conditions of restricted

trade which level we assume to remain the same. Harberger calls a trade sector small when it represents only 10% of the national income. However, he assumes that under free trade it will rise to nearly 20% of the national income. Price changes in such a sector can hardly be assumed to have little or no effect on the domestic sector. In Australia, in the post-war period, with a considerable amount of protection, imports have varied between 31% and 15% and exports between 31% and 17% of national income at factor cost. Under such circumstances a partial equilibrium approach to problems of trade protection does not seem justified.

Johnson's approach is basically an application of Corden's technique to Harberger's partial equilibrium method which applies to the whole trade sector. His treatment is more elaborate and is carried out with the help of mathematical analysis. He also discusses the assumptions in more detail. However, anyone who believes that the partial equilibrium approach is not permissible when applied to a whole trade sector will feel the sort of hesitation, already expressed, in accepting the results. It is perhaps needless to say that any expression of welfare gain as a fraction of national income concerns changes in total utility for the community as a whole. Johnson says: "Such a measure presupposes that the country's welfare can be considered as a unit". He also says: "When applied to a country as a whole, it also raises certain problems of consistency whose solution complicates the measure".

The controversy between the usefulness or otherwise of the partial equilibrium approach to problems of international trade, and particularly the tariff problem, is not new, as the literature on the subject illustrates. The partial equilibrium method was commented on by Haberler,[17] who referred to the use of this method by Richard Schuller[18] and Enrico Barone, as follows: ". . . the ordinary supply and demand curves . . . give only a partial view of the whole situation, but, nevertheless, they are quite indispensable to a study of the direct effects of international trade and of measures of trade policy, such as tariffs, and their use is an essential preliminary to a more far reaching analysis". Both Barone and Schuller use the concepts of consumers' and producers' surplus. Haberler defines consumers' rent as "that sum of money which would exactly compensate the consumer for the given rise in price".[19] Although he mentions that he regards the concept as of very doubtful validity, he thinks that it may be used for the purpose. He stresses however that this method of measuring the gain to consumers is severely restricted. He says: "It can be used to measure the loss to consumers from *one* single duty, provided that everything else remains unchanged. The loss inflicted by a multitude of duties cannot be measured in this way, since as more duties are imposed the various demand curves must alter". He further stresses

[17] G. Haberler: *The Theory of International Trade*, pp. 169-170.
[18] Richard Schuller: *Schutzzoll und Freihandel.*
[19] *Op. cit.*, p. 258.

that we must assume that the marginal utility of money remains constant. This will be unchanged only, he says, "if the price of only *one* good among *many* is affected, and even so only if not more than a small portion of the total income is spent upon this good". Viner, in his comments on Barone's methods,[20] was considerably more critical of the approach used, even in the case of only one commodity. Among other things he said that the concept of "consumer surplus" had an "indefinable meaning" and could not be compared with any area representing an actual saving in money. He said: "Barone's technique of analysis is invalid . . . even if what is in issue is the gain or loss resulting from the removal of a single minor import duty, although the results which he obtains are for most situations probably the same *in direction* as those which would be obtainable by more acceptable methods. But Barone claimed that his conclusions are 'manifestly' applicable, without need of additional qualification, to the case of the removal of an entire tariff". Viner mentions that an algebraic formula introduced in 1904 by Pigou and applied statistically by Henry Schultz in 1928 is essentially an algebraic application of the Cunyinghame-Barone graphical analysis. Viner thinks that this method, although somewhat suspect, is practicable for tracing the effect of a change in duty on the price of a particular commodity on the *ceteris paribus* assumption. However, he says: "The method would be even more suspect if it purported to serve as a means of measuring the amount of gain or loss to a country resulting from a tariff change, whether the change was a major or a minor one."

Our findings, so far, may be summed up as follows. A critical examination made of the so-called Brigden method by Corden suggests that this method may overstate the cost of protection. We have found that there is no *priori* likelihood that this is indeed the case. With regard to the further contention that tariff costs, expressed as a percentage of the national income, are normally bound to be low we found that the techniques of measurement are not necessarily applicable and may, in any case, contain a downward bias. Here again we found that there is no *a priori* likelihood that excess costs are normally low.

V. *The Static Approach and its Applicability*

So far we have tried to indicate some of the difficulties which we feel may attach to the concept and measurement of "excess cost" of tariff protection. It is realized that an approach which gives some positive results in actual cases, however approximate, will be preferred by many economists to one that has to confine itself to theoretical possibilities. In view of this it is of some importance to have a brief look, finally, at the whole framework of the recent contributions.

Both Harberger and Johnson explicitly state that they use a static framework. The question is to what extent the Australian tariff problem can be analysed within such a framework.

[20] Jacob Viner: *Studies in the Theory of International Trade*, pp. 590-592.

Elsewhere[21] I have argued that most of the arguments traditionally put forward in favour of protection in Australia carry little conviction with the exception, perhaps, of the economic growth argument.

It can be argued, on theoretical grounds, that under conditions of competition the need for protection of potentially advantageous industry implies the existence of so-called "external economies". It is often thought that such "external economies" are most readily achieved in the field of manufacturing. It is also generally held that in Australia the tariff has, over the years, been a considerable stimulus to manufacturing. In the opinion of the present writer it is likely that in the past the tariff has stimulated economic growth in this country and has made possible the realization of "external economies" in the field of production and investment.[22] If we assume that the growth argument provides the only "economic" justification for the Australian tariff and that the non-economic arguments carry no conviction the question arises whether a static analysis is a satisfactory approach to the Australian tariff problem. Growth takes time and in Australia, for the whole of this country, the tariff has been operating since 1908 and in all earnest since 1921. Considerable protection, therefore, has been with us for forty years. It is quite possible that some industries may indeed take generations to "grow up" in the sense that the "external economies" can be reaped in full. What, in such a connection, is the meaning of the "excess cost" of protection as calculated at any particular time? There is not much to be gained in calculating the cost of a tariff if we cannot compare this with possible benefits. If the only possible benefits are benefits of growth, the "excess cost" as calculated within a static framework is no guide to the size of the possible gain. A low "excess cost" may go with a low gain or a loss and a high "excess cost" with a high gain. It all depends on how much scope there is for the realization of "external economies" and how much time is involved. The "excess cost" as calculated may be low but the actual tariff may fail to stimulate that production which would yield the richest harvest of "external economies" in the nearest future. A different tariff, with a much higher "excess cost", may achieve such a stimulus and thus lead to ultimate "economic" gain.

It is for the above reasons that I feel that not much can be gained in Australia by trying to calculate the "excess cost" of protection. I feel that it is perhaps more profitable to investigate the likelihood of the realization of "external economies" in the various branches of industry applying for protection. This could perhaps be attempted with the help of input-output analysis which could show how industries are related to each other in the sense that they contribute to one another's production and use one another's products.

Does the above reasoning mean that there is no scope left for cal-

[21] *Op. cit.*, Ch. V ff.

[22] For a more elaborate discussion of these "external economies" and the growth aspects of the Australian tariff the reader may be referred to my *Trade Protection in Australia*, Chs. VII and X.

culating the cost of protection? I think that the answer to this question is yes, if we have in mind the overall cost of existing protection. However, there are two cases in which there could be scope for calculating the cost of protecting individual industries.

In the first place we must remember that we believe and have assumed that the tariff has stimulated growth and that this was the only justifiable argument in its favour. If this assumption is dropped and one believes that there are no valid "economic" arguments for the tariff there may still be "political" reasons for its existence. In such a case, where the tariff would be imposed at a permanent economic "cost" it may be regarded as of interest to know how this "cost" compares from one industry to another in order to try to limit protection to the "cheaper" ones. It is clear that the present writer does not share this outlook. However, if one is of a different opinion in this respect it would seem that, because in each calculation one limits oneself to individual industries, the partial equilibrium method could be justified. Also because of the relative unimportance of the indirect effects, the Brigden method, using average cost instead of prices as suggested by Corden, would then seem to be a close enough approximation.

In the second place, assuming that the tariff can be justified on economic development grounds, we might be faced with a choice of which industry should be protected with respect to the most promising economic prospects. This would require not only that we know, perhaps with the help of input-output analysis, how the industries compare with respect to the possibility of the realization of "external economies" but also that we know the likely time that is involved in the development of each industry. In such a case it may help a decision if the relative costs of protecting each industry are compared.

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ECONOMIC MOBILITY OF IMMIGRANTS IN AUSTRALIA*

The economic mobility of immigrants can be studied in terms of changes in various economic characteristics of the immigrant group as compared with the total population. The present study attempts to analyse three aspects of the degree of economic mobility on the part of immigrants in Australia: participation in various industries, distribution according to occupational status, and ownership of dwellings. This is obviously only a small selection of a large number of economic characteristics, but the choice was severely limited by the availability of statistical information.[1] Our aim is to provide a behavioural description of the process of immigrants' economic adjustment and no attempt is made to examine the relative merits of conformity or divergence.

The Model

The basis underlying a study of economic adjustment of immigrants is the contention that in most if not all aspects of economic behaviour immigrants are, to a varying degree, different from the total population. Since age is, by necessity, a factor which may account for some of the differences, the influence of age should be removed before comparisons are made. The working hypothesis embodied in the model is that the differences, after allowing for age, can be explained by

(i) the immigrants' length of stay in the country;
(ii) the fact that immigrants were, at the time of their arrival, essentially "different" from the native Australians by virtue of their economic, social and cultural background; and
(iii) a number of small random factors operating in an unsystematic way in either direction.[2]

Further, it is expected that the differences between immigrants and the total population are negatively correlated with both the length of residence in the country and the degree of similarity of backgrounds. In other words, it is expected that the longer the immigrants have been in Australia, and the more similar to Australians they are in terms of their economic, social and cultural background, the less economically distinguishable they are. This is the hypothesis which we try to test with respect to industrial distribution, distribution according to occupational status, and dwelling ownership.

* I wish to thank Prof. M. W. Reder for his helpful comments on an earlier draft of this paper.

[1] It is hoped that this article may help to stimulate interest in, and demand for, statistical data on some more pertinent economic features of immigration.

[2] Another systematic cause operating on the speed of economic adjustment is the age of the immigrant at his arrival in Australia; the older the immigrant on his arrival, the more difficult it may be for him to adjust. This was not considered explicitly because the age distribution of immigrants on arrival in Australia has been, with few minor exceptions, relatively constant in the past.

To be able to carry out the statistical test we also need to specify the form of the relationship. The choice lies between linear and non-linear form; linearity implies that the marginal influence of a factor on the dependent variable does not change with the size of the factor considered, whereas non-linearity allows for variation. It seems plausible to expect that the marginal effect of the length of stay in the country is likely to diminish with time. In other words, each additional adjustment on the part of the immigrant will be smaller than the previous adjustment made. This suggests the use of a logarithmic form in expressing the influence of the length-of-stay factor.[3] On the other hand, there appears to be no strong reason why the similarity of backgrounds should operate in a non-linear fashion.

The resulting model describing the differences between immigrants and the whole of the population with respect to aspect "a" then becomes

$$Y^{(a)} = \beta_0 + \beta_1 \log X_1 + \beta_2 X_2 + \epsilon ,$$

where $Y^{(a)}$ = variable measuring differences between immigrants and the total population with respect to aspect "a",

X_1 = variable measuring the length of stay in Australia by the immigrant group in question,

X_2 = variable measuring the degree of similarity of backgrounds between the immigrant group and Australians,

ϵ = random disturbance,

$\beta_0, \beta_1, \beta_2$ = behavioural parameters.

If $Y^{(a)} \gtrless 0$, and if $Y^{(a)} = 0$ indicates a lack of any differences, then we would expect β_1 and β_2 to be negative, and β_0 to be positive. The unit of observation is any specific group of immigrants with a given length of stay in the country and a given degree of similarity of backgrounds with Australians.

The decision concerned with the nature of operation of the independent variables X_1 and X_2 on the dependent variable $Y^{(a)}$ can be demonstrated by first partial derivatives:

$$\frac{\partial Y^{(a)}}{\partial X_1} = \frac{\beta_1}{X_1} ,$$

$$\frac{\partial Y^{(a)}}{\partial X_2} = \beta_2 .$$

That is, the marginal adjustment (i.e., decrease in the "standard difference") with respect to the period of residence is inversely related to its length, while the marginal adjustment with respect to the similarity of backgrounds is independent of the size of the variable.

It is to be noted that the basic assumption underlying any generalizations from our model implies that all immigrants in certain circumstances react always in the same way, save for a random devia-

[3] In fact, both simple and logarithmic forms of the length-of-stay variable were tried on the data, and in each case it was found that the logarithmic form provides a better description of the situation.

tion. In particular, it has to be assumed that when a group of immigrants with a given similarity of background enters the n-th year of residence, it will behave in basically the same way as any other group of the same background in the n-th year of stay in Australia.

Finally, it remains to specify the statistical properties of the model. Here the independent variables X_1 and X_2 are taken as predetermined numbers (i.e., non-random variables) and ϵ is assumed to be a normally independently distributed random variable with zero mean, constant variance, and independent of X_1 and log X_2.

The Variables

The dependent variable $Y^{(a)}$ is supposed to measure the differences between immigrants and total population with respect to characteristic "a", the differences being measured after allowing for age. The required measurement of $Y^{(a)}$ may relate to differences in multi-class distributions, as in the case of industrial distribution, or it may relate to a difference in the proportion of those who possess a given attribute. In the case of occupational status and of ownership of dwellings, both types of measurement are possible and reasonably meaningful.[4] In either case it is necessary that the comparison should abstract from any differences in the respective age distributions of the two groups. This is achieved by comparing the actual distribution of immigrants according to a given characteristic with the distribution obtained by postulating that at each age immigrants behave in exactly the same way as the total population.[5] Any difference between the actual and the theoretical distribution has to be explained by factors other than age.

The second problem is that of choosing a reasonably descriptive measure of the differences between immigrants and the total population. If the aspect under consideration is such that a two-class grouping is adequate, a difference in respective proportions in one of the classes provides quite a satisfactory measure. If, however, more than two groups are necessary, a different measure has to be devised. The measure chosen for our purpose is given by the formula[6]

$$\sqrt{\frac{1}{t}\sum_{j=1}^{t}(a_j - e_j)^2}$$

[4] The distribution according to occupational status can be classified into the following groups: employer, self-employed, employee (wage- or salary-earner), helper (not on wage or salary), "not at work", and "not stated". Alternatively, persons in the work force could be classified dichotomously as independent (employers and self-employed) or dependent (non employers or self-employed). If the latter classification is adopted, it is necessary to compare only the proportion of, say, independent workers in the groups under study. The case of dwelling ownership is amenable to a similar treatment.

[5] For algebraic derivation of the postulated distribution, see Appendix I.

[6] The formula was decided upon after some experimentation. It has one advantage over a χ^2-type of formula in that it allows for the case where $e = 0$. Unlike a χ^2 formula, it does not weight the squares of differences by the respective expected values. In any case, the differences between the formula above and other measures attempted, including the χ^2 type, did not appear to be of substantial character.

where a_j = actual percentage of immigrants belonging to the j-th group;

e_j = percentage of immigrants expected to belong to group j if, at each age, immigrants behaved in exactly the same way as the total population;[7]

t = number of groups.

The formula is of a "standard deviation" type and, by convention, assumes only positive or zero values. It will be referred to in the rest of the text as the "standard difference".

The measures of the independent variables were considerably easier to find. The length of stay in the country can be measured by the period of residence in years as classified by the Commonwealth Statistician in the 1954 Census publications. The similarity of backgrounds between immigrants and Australians was thought to depend on the ethnic origin of immigrants. This can be, at least in the first approximation, measured by the percentage of British-born among each given group of migrants.[8]

The Data

All data have been derived from the results of the 1954 Census for total Australia. It is unfortunate that the data represent a somewhat unique sample of "potential history" because of the presence of recently arrived displaced persons—a phenomenon unlikely to be repeated in future. By the time of the 1954 Census a great majority of the displaced persons had already completed their employment obligation, but the fact that for two years they had virtually no choice in the selection of work probably retarded their initial economic adjustment. Also, the post-war non-British immigrants had only very few predecessors among the earlier arrivals—another pertinent feature which makes them distinguished from the current stream of immigrants. However, since the variables are measured independently of the actual number of immigrants in any given year, and since displaced persons appear only in two or three years (i.e., units of observation), the distortion is largely limited to the influence on the size of the disturbance term of our model.

The description of the data on each of the three economic characteristics considered is given below:

(A) *Immigrants' participation in industries*

The detailed classification in the 1954 Census gives figures for some 335 industries; these have been congested into 18 groups in such

[7] See Appendix I. Note also that $a_j = 100\left(\frac{m_{.j}}{m}\right)$ and $e_j = 100\left(\frac{\hat{m}_{.j}}{m}\right)$ in the terminology of the appendix.

[8] "British-born" include persons born in England, Wales, Scotland, Northern Ireland, Republic of Ireland, and Ireland-undefined. The classification as well as the actual figures were taken from J. Zubrzycki, *Immigrants in Australia,* (Melbourne University Press, 1960), p. 48.

a way as to provide an interesting cross-section of immigrants' industrial activity.[9] Some adjustments of the official figures were necessary before applying the data to our model; these concerned immigrants of less than one year of residence in Australia.[10]

Compilation of the theoretical distribution (i.e., the distribution which would show the proportion of immigrants in each industrial class if, at each age, immigrants were joining various industries at the same rate as the total work force) requires a knowledge of the age distribution of immigrants in the work force. These data cannot be obtained and had to be estimated from the age distribution of all immigrants, whether in the work force or not. The details of the estimation procedure are given in Appendix II.

From the estimated age distributions of male and female immigrants of each specific period of residence in the work force, we can determine the theoretical distribution which removes the effect of age and, finally, calculate the "standard difference".

(B) *Distribution of immigrants according to occupational status*

A classification of immigrant male and female work force according to both period of residence and occupational status is not published, but was obtained on special request from the Commonwealth Statistician.[11] The theoretical distribution was derived by utilizing the estimated age distribution of male and female immigrants of specific period of residence participating in the work force.

(C) *Ownership of dwellings*

The information considered as relevant for the study of ownership of dwellings is that classifying immigrant householders by nature of occupancy.[12] The age distribution of immigrant householders had to be estimated[13] in order to determine the theoretical distribution. Having obtained the theoretical distribution, we calculated the "standard difference" and, as an alternative, the difference in the percentage of owners or purchasers by instalments among immigrants and among all householders.

[9] The explanation of the method and the details of the adopted industrial classification are given in Appendix III.

[10] Of all male immigrants of less than one year residence 28.1% appeared to be concentrated in the Transport, Storage and Communication industry; the corresponding percentage for male immigrants of 1 to 2 years of residence was 5%. The high concentration of immigrants of less than one year residence in this industry was no doubt due to a large number of foreign transport workers employed on visiting ships, aircrafts, etc., at the time of the Census. Further, both male and female immigrants of less than one year of residence showed an unduly high frequency of "industry not stated". Both anomalies were adjusted by assuming that the concentrations of immigrants of less than one year of residence were, in each case mentioned above, the same as those of immigrants of 1 to 2 years of residence.

[11] The author wishes to express his thanks to the Commonwealth Statistician for his highly co-operative attitude in this matter.

[12] Types of occupancy are: owner, purchaser by instalments, tenant, and other occupant. See 1954 Census, Part II, Vol. VIII, Table Nos. 15 and 21.

[13] See Appendix II.

The Results

The parameters of the regression equation specified by our model were estimated by the method of least squares. These estimates are, on the assumptions stated, unbiased, efficient, and of a maximum likelihood type.

A. *Male immigrants in industries*

The estimated regression equation describing how the male immigrants differ from the total male work force in their participation in various industries is given by

$$(I)\quad \hat{Y}^{(a)} = \underset{(\cdot 17)}{4\cdot 001} - \underset{(\cdot 15)}{\cdot 560 \log X_1} - \underset{(\cdot 0056)}{\cdot 022 X_2}\ ,$$

$$R^2 = \cdot 943\ .$$

Both regression coefficients, $\hat{\beta}_1$ and $\hat{\beta}_2$, are highly significant, and so is the F-statistic testing the existence of the relationship. We can conclude that both factors, the period of residence in the country and the proportion of British-born immigrants, are highly important in diminishing the difference between male immigrants and the total male work force with respect to the rate of joining various industries. It is to be noted, however, that owing to the size of the constant term, the process of completing the adjustment is rather slow. In fact, the estimated time required for a 100% British group of immigrants to participate in various industries at the same rate as the native Australians would be somewhat over 100 years.[14] This is not really so surprising as it may be expected that the immigrant group may display a certain inherent rigidity which even a very long period of exposure to the Australian industrial environment would not fully eradicate. It seems less likely that barriers with respect to entry into particular industries would persist over a very prolonged period of time.[15]

B. *Female immigrants in industries*

The differences in the relative participation in various industries of the female immigrants and of the total female work force have been estimated by

$$(II)\quad \hat{Y}^{(b)} = \underset{(\cdot 64)}{5\cdot 684} - \underset{(\cdot 55)}{\cdot 457 \log X_1} - \underset{(\cdot 019)}{\cdot 061 X_2}\ ,$$

$$R^2 = \cdot 822\ .$$

It appears that here the coefficient attached to $\log X_1$ is not significant. In other words, the period of residence of female immigrants does not affect the degree to which the females adjust

[14] The value of $Y^{(a)}$ for the native Australian male work force is ·54.

[15] At this stage, it ought to be emphasized that our model attempts to describe the process of economic adjustments and not the reasons underlying its speed; that is, we are estimating the values of the parameter without trying to explain them. Such a task could be undertaken only by embarking upon a comprehensive study of the mobility of labour, relative earnings in various industries, labour institutions, etc.

themselves to the Australian industrial environment. The percentage of British-born is, however, relevant in decreasing the differences or, in our terminology, promoting mobility in this respect. A test reveals that the removal of log X_1 from the regression equation does not significantly reduce the strength of the relationship,[16] so that we can use a simple regression model relating the "standard difference" $Y^{(\bar{b})}$ and the percentage of British-born. This is, then,

$$\text{(III)}\quad \hat{Y}^{(\bar{b})} = \underset{(\cdot 582)}{5 \cdot 891} - \underset{(\cdot 013)}{\cdot 073\, X_2}\ ,$$

$$R^2 = \cdot 805\ .$$

According to this model, a group of female immigrants with about 75% British-born among them will not basically differ from the native Australian women in the distribution over various industries.[17]

The value of the regression coefficient attached to the British-component variable is considerably greater with respect to the female industrial distribution than with respect to the corresponding male distribution; this is, at least partially, due to the insignificance of the period of residence in describing the female industrial adjustment process.

C. *Occupational status of male immigrants*

The economic mobility of male immigrants with respect to occupational status measured by the "standard difference" is estimated as

$$\text{(IV)}\quad \hat{Y}^{(\bar{c})} = \underset{(1 \cdot 08)}{8 \cdot 029} - \underset{(\cdot 96)}{2 \cdot 537 \log X_1} - \underset{(\cdot 036)}{\cdot 064 X_2}\ .$$

$$R^2 = \cdot 846\ .$$

The regression coefficient attached to X_2 is not significant: the proportion of British-born is not relevant in promoting the economic mobility of male immigrants as far as their occupational status is concerned. The value of R^2 is not significantly affected by removing the variable X_2;[18] the resulting simple regression equation is

$$\text{(V)}\quad \hat{Y}^{(\bar{c})} = \underset{(\cdot 549)}{6 \cdot 351} - \underset{(\cdot 727)}{3 \cdot 819 \log X_1}\ ,$$

$$R^2 = \cdot 776\ .$$

The estimated period of residence in Australia necessary for the male immigrants to attain a distribution with respect to oc-

[16] The F-statistic for testing the reduction in the regression sum of squares is ·70 (with 1 and 7 degrees of freedom), which is definitely not significant.

[17] The value of $Y^{(\bar{b})}$ for native Australian women is ·40.

[18] The F-statistic of the reduction in the regression sum of squares is 3·19 (1 and 7 degrees of freedom); this is not significant.

cupational status which would be similar to that displayed by the native Australian males is approximately 30 years.[19]

This conclusion remains unaltered if we measure the differences in occupational status by the difference in the percentage of males with independent occupational status (employers or self-employed). The regression equation is

$$\text{(VI)}\quad \hat{Y}^{(\bar{\bar{e}})} = \underset{(3\cdot42)}{-16\cdot512} + \underset{(3\cdot06)}{6\cdot730}\log X_1 + \underset{(\cdot114)}{\cdot131}\,X_2 \quad ,$$
$$R^2 = \cdot761 \quad .$$

The signs of the regression coefficients indicate an increase in $\hat{Y}^{(\bar{\bar{e}})}$ corresponding to increases in the independent variables; since most values of $Y^{(\bar{\bar{e}})}$ are negative, the positive signs of the regression coefficients indicate a reduction in the differences between immigrant males and total males. Here again, the British-component variable appears insignificant, but the relationship appears to be poorer than when the "standard difference" is used as a measure of integration.

D. *Occupational status of female immigrants*

The test of the relationship between "standard difference" of the distribution according to occupational status on one side and the period of residence and the percentage of the British-born component of female immigrants on the other, gives

$$\text{(VII)}\quad \hat{Y}^{(d)} = \underset{(1\cdot61)}{1\cdot650} + \underset{(1\cdot37)}{\cdot306}\log X_1 - \underset{(\cdot047)}{\cdot002}\,X_2 \quad ,$$
$$R^2 = \cdot011 \quad .$$

This relationship does not appear to be at all significant. The same conclusion can be drawn when the measure of the differences in the occupational status of female immigrants and total females is the percentage of females with independent occupational status:

$$\text{(VIII)}\quad \hat{Y}^{(\bar{\bar{d}})} = \underset{(4\cdot34)}{-1\cdot888} + \underset{(3\cdot69)}{5\cdot344}\log X_1 - \underset{(\cdot13)}{\cdot019}\,X_2 \quad ,$$
$$R^2 = \cdot358 \quad .$$

That is, there is no evidence to suggest that either the length of stay in the country or the percentage of British-born among immigrant females would in any way account for the differences in the occupational status between immigrant and native Australian females.

E. *Dwelling ownership of immigrant householders*

Differences in dwelling ownership between immigrant and total householders can again be measured either by the "standard difference" which takes into account all four types of occupancy

[19] $Y^{(\bar{e})}$ for native Australian males is ·66.

by householders,[20] or by differences in the percentage of owners or purchasers by instalments. Adopting the former method we obtain

$$(IX)\quad \hat{Y}^{(e)} = \underset{(3\cdot3)}{9\cdot404} - \underset{(2\cdot9)}{19\cdot324}\log X_1 + \underset{(\cdot105)}{\cdot317}\,X_2 \quad ,$$
$$R^2 = \cdot884 \quad .$$

Both of the independent variables—period of residence and percentage of British-born—are significant in explaining the variations in the "standard difference". It is very interesting to find, however, that while the period of residence diminishes the differences between immigrants and natives, an increase in the British component tends to operate in the opposite direction. The higher the percentage of British immigrants, other things being equal, the greater the difference between immigrants and natives with respect to dwelling ownership. According to our model, it would take a group of immigrants with 50% British-born about 21 years to approximate the natives in this respect;[21] an immigrant group with no British-born among them would take about 3 years.

By using the proportion of owners or purchasers by instalments as a measure of the differences between immigrants and natives, we arrive at the same conclusion. The regression equation now is

$$(X)\quad \hat{Y}^{(\bar{e})} = \underset{(5\cdot2)}{-15.200} + \underset{(4\cdot6)}{32\cdot278}\log X_1 - \underset{(\cdot167)}{\cdot507}\,X_2 \quad ,$$
$$R^2 = \cdot895 \quad .$$

Again, both regression coefficients are significant and the difference between immigrants and total householders is diminished with the length of residence and increased with the percentage of British-born.[22] It appears that a group of immigrants of whom 50% are British-born would take close to 20 years to have purchased dwellings at the same rate as the native Australians;[23] a group with no British-born among them would take a little over 3 years to achieve the same pattern of home ownership.

Conclusion

Immigrants do, to a varying degree, differ from the native Australians in all three aspects of economic life considered above. The most striking differences are summarized below:

(a) *Industrial distribution*

(i) There is a high concentration of male immigrants, as compared to total males, in most of the manufacturing in-

[20] That is, owners, purchasers by instalments, tenants, and other occupants.
[21] $Y^{(e)}$ for native Australian householders is ·61.
[22] All values of $Y^{(\bar{e})}$, except for that relating to over 15 years residence which is close to zero, are negative.
[23] For native Australians, $Y^{(\bar{e})} = \cdot90$.

dustries, in the building and construction sector (with the exception of male immigrants of over 8 years of residence), and in the hotel, boarding house and hotel service industries.

(ii) All the male immigrants tend to engage in farming and grazing in considerably smaller proportion than the total males.

(iii) All female immigrants of less than 15 years of residence tend to be concentrated in the food and clothing industries in considerably greater proportion than the total females in the work force.

(b) *Distribution by occupational status*

There are relatively more wage- or salary-earners, and relatively less employers or self-employed, among male immigrants of less than 7 years of residence and among female immigrants of less than 6 years of residence, than among total males and females.

(c) *Dwelling ownership*

The proportion of dwelling owners or purchasers by instalments among immigrant householders of up to 15 years residence is lower than among householders as a whole.

All the above statements remain true even if we allow for the differences in the respective age distributions.

We have attempted to explain these differences, and to measure the degree to which they are diminished, by examining the significance of the length of stay in Australia and of the British component. The main results are presented in Table 1.

The hypothesis that the differences between immigrants and natives diminish with the length of stay and with an increased percentage of British-born can be upheld only in the case of male industrial distribution.

The distribution of female immigrants over various industries depends only on the proportion of British-born and not on the period of residence. The irrelevance of the length-of-stay factor is an interesting conclusion; it may, in part, stem from the fact that the range of industries open to women is narrower than the entire range of industries which men can join. It may also indicate a lower degree of flexibility on the part of women, but other more complex reasons no doubt exist.

The economic mobility of male immigrants with respect to occupational status appears to be independent of the relative size of the British component. This may be due to a variety of causes which are characteristic of all immigrants regardless of ethnic origin. Among these, the ones which are likely to be most prominent are: quantity of capital brought into the country, attitude to entrepreneurship, and restrictions on the formation of new enterprises.

Differences in the occupational status between female immigrants and total females cannot be explained either by period of residence

TABLE 1

Economic Aspect		Regression Equation No.	Explanatory Variable				Coefficient of Determination (R^2)
			Period of Residence		% British-born		
			Sign*	Degree of** significance	Sign*	Degree of** significance	
Industrial distribution	M	I	−	H.S.	−	H.S.	·943
	F	II	−	N.S.	−	S.	·822
Distribution according to occupational status	M	IV	−	S.	−	N.S.	·846
	F	VII	+	N.S.	−	N.S.	·011
Purchasing of dwellings		IX	−	S.	+	S.	·884

* A + sign means that the difference between immigrants and natives is increased, and a − sign that it is reduced, as the independent variable is increased.

** S. = significant (i.e., at 5% level).
H.S. = highly significant (i.e., at 1% level).
N.S. = not significant.

or by the percentage of British-born. Other characteristics of foreign-born females and/or of economic environment are obviously responsible for the observed differences.[24]

The conclusion with respect to dwelling ownership is highly interesting. Both factors, period of residence as well as relative size of the British component, are significant in effecting adjustments on the part of the immigrants, but it appears that purchasing of dwellings is retarded rather than promoted by a higher proportion of British-born among the migrants.

If we wish to compare the relative speed of adjustment of immigrants in the three aspects of economic life considered, we may use the "elasticity of standard difference with respect to period of residence" as a measure.[25] The results are:

[24] The distortion to the fit of our regression model seems to be due mainly to the behaviour of the immigrant females of 6 to 15 years of residence, who appear more often than expected in employer or self-employed categories. A further study of the special characteristics of this group might indicate a more appropriate choice of the explanatory variables, but the data provided by the Commonwealth Statistician offer no further help in this respect.

[25] Estimate of the elasticity of standard difference with respect to period of residence is given by

$$\hat{\eta} = \frac{\hat{\beta}_1}{\bar{Y}}$$

where Y is measured at its mean value. This is a purely formal measure and was used solely because it is independent of the units in which Y is measured.

Industrial distribution (male immigrants)	— ·203
Distribution according to occupational status (male immigrants)	— ·659
Dwelling ownership	— 1·971

It is to be concluded, then, that the economic adjustment is most rapid with respect to dwelling ownership, and slowest with respect to industrial distribution. A higher British component will increase the economic adjustment in the case of industrial distribution, slow it down in the case of dwelling ownership, and leave the distribution by occupational status unaffected.

All the conclusions are, of course, subject to the qualifying assumptions stated in the text; the results of the 1961 Census should provide a further testing ground.

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APPENDIX I

*Derivation of theoretical distribution of immigrants based on the postulate of identical behaviour with that of the total population at each age.**

Let the total male (female) population be classified into t groups with respect to a given characteristic, and let

p = total male (female) population;
m = total male (female) immigrants of specific period of residence;
$p_{i.}$ = all males (females) of age i;
$m_{i.}$ = all male (female) immigrants of specific period of residence of age i;
$p_{.j}$ = total number of all males (females) belonging to group j;
$m_{.j}$ = total number of immigrant males (females) of specific period of residence belonging to group j;
p_{ij} = total number of all males (females) of age i belonging to group j;
m_{ij} = total number of immigrant males (females) of specific period of residence of age i belonging to group j.

The postulate of identical behaviour of immigrants and total population *at each age* implies that

$$(1) \qquad \frac{m_{ij}}{m_{i.}} = \frac{p_{ij}}{p_{i.}} \quad .$$

On the basis of this postulate we wish to derive the number of immigrants of specific period of residence theoretically belonging to group j, say, $\hat{m}_{.j}$.

Since by definition $m_{.j} = \sum_i m_{ij}$,

we have, from (1) above,

$$\hat{m}_{.j} = \sum_i \left(\frac{p_{ij}}{p_{i.}}\right) . m_{i.} \quad .$$

This gives the theoretical distribution required.

APPENDIX II

Estimation of the Age Distribution of Immigrants in the Work Force.

Let $p_{i.}$ = all males (females) of age i;
$w_{i.}$ = number of males of age i in the work force;
$m_{i.}$ = all male (female) immigrants of specific period of residence and of age i;
$u_{i.}$ = number of immigrant males (females) of specific period of residence and of age i in the work force;
u = total number of immigrant males (females) of specific period of residence in the work force.

* The actual calculations were based on five-yearly age groups.

We assume that

$$(1) \qquad \frac{u_{i.}}{m_{i.}} = \frac{w_{i.}}{p_{i.}} \cdot k,$$

where k is the correction factor which is the same for each age group. Then

$$(1') \quad u_{i.} = \frac{w_{i.}}{p_{i.}} \cdot m_{i.} \cdot k$$

and, summing over all ages,

$$(2) \quad \Sigma_i u_{i.} = k \Sigma_i \left(\frac{w_{i.}}{p_{i.}}\right) \cdot m_{i.} .$$

Since $\Sigma_i u_i = u$ which is known, the correction factor "k" is given by

$$(3) \quad k = \frac{u}{\Sigma_i \left(\frac{w_{i.}}{p_{i.}}\right) \cdot m_{i.}} .$$

By substituting for "k" from (3) into (1') the estimate of $u_{i.}$ can be readily obtained.*

The above procedure was also adopted to obtain estimates of the age distribution of the immigrant householders.† The calculations were carried out for each specific period of residence.

A partial check of the reliability of the estimates is provided by the size of k; the closer k is to unity, the greater the expected degree of reliability. The results are summarized in table II:

TABLE II

PERIOD OF RESIDENCE	VALUE OF THE CORRECTION FACTOR k		
	Male immigrants in the work force	Female immigrants in the work force	Immigrant householders
Under 1 year	1·0009	1·1090	·3682
1 year and under 2 years	1·0042	1·3082	·7026
2 years and under 3 years	1·0089	1·4120	·7866
3 " " " 4 "	1·0061	1·4023	·9171
4 " " " 5 "	1·0049	1·5126	·9788
5 " " " 6 "	1·0021	1·5654	1·0238
6 " " " 7 "	·9986	1·3478	1·0214
7 " " " 8 "	·9939	1·3561	1·0024
8 " " " 15 "	·9721	1·0575	1·0413
15 years and over	·9983	1·0300	1·0829

Incidentally, the correction factor k provides a measure of participation of immigrants of specific period of residence in the work force and in the formation of households as compared to the total population, after allowing for differences in the respective age distribution. It appears that there is little difference in the participation in the work force between male immigrants and total males regardless of the period of residence. On the other hand, the female immigrants tend, without exception, to join the work force more frequently than total females (and, of course, more frequently than the native Australian females). This difference is most pronounced with respect to immigrant females of 4 to 6 years period of residence. Finally, immigrants of less than 5 years of residence lag behind the total population with regard to household formation.

* A necessary condition of plausibility of $\hat{u}_i$ is that $\hat{u}_i \leq m_i$. This condition was not fulfilled with respect to female immigrants of 2 to 6 years residence in the age group of 15 to 19 years. The estimate of the age distribution in each of these cases was modified by assuming $u_{15-19.} = .95 m_{15-19.}$ and altering the correction factor "k" for the remaining age groups accordingly.

† With respect to householders, w_i stands for the number of householders of age i, and $u_{i.}$ for the number of immigrant householders of age i.

APPENDIX III

Industrial classification.

In condensing the 335 industrial categories of the 1954 Census* into a smaller, and therefore more manageable, number of groups, the following principles were being observed:

* See Tables 41 and 42 of Part I, Vol. VIII, *Census of the Commonwealth of Australia*, June, 1954.

(i) The relative frequencies of individual classes should be of a similar order of magnitude.
(ii) The classes should be constructed in such a way as not to obscure any significant concentrations of immigrants.
(iii) The classification should be the same for males as for females.
(iv) Maximum conformity with the Census classification by *major* industrial groups is desirable.

The industrial classes used in the study and the corresponding Census categories (shown in the brackets) are given below.

Class 1: *Primary Production—Farming and Grazing* (Farming, mixed and undefined; Wheat and sheep farming; Wheat growing; Grazing; Dairying; Pig farming; Poultry farming).
Class 2: *Primary Production—Other* (Fishing; Hunting and Trapping; Sugar growing; Fruit growing; Grape growing; Vegetable growing; Flower growing; Tobacco growing; Other agriculture; Beekeeping; Other farming; Forestry).
Class 3: *Mining and Quarrying* (as per Census—Group B).
Class 4: *Manufacturing—Founding, Engineering and Metalworking* (as per Census—Group C, Sub-Group 3).
Class 5: *Manufacturing—Motor Vehicles* (Motor vehicles, parts and accessories; Motor engineering; Motor bodies, caravans and trailers).
Class 6: *Manufacturing—Food, Textile and Clothing* (Manufacture of Textile and Fibrous Materials; Manufacture of Clothing and Knitted Goods; Manufacture of Boots, Shoes and Accessories; Manufacture of Food, Drink and Tobacco).
Class 7: *Manufacturing—Other* (residual of Group C—Manufacturing).
Class 8: *Electricity, Gas and Water* (Electricity, Gas, Water and Sanitary Services—Production, Supply and Maintenance).
Class 9: *Building* (Construction and Repair of Buildings).
Class 10: *Construction* (Construction Works other than Buildings).
Class 11: *Transport and Communication* (Transport and Storage—Group F, and Communication —Group G).
Class 12: *Commerce and Finance—Retail Trade* (Retail Trade—Group I, Sub-Group 3).
Class 13: *Commerce and Finance—Other* (Finance and Property Business—Group H; Wholesale Trade; Livestock and Primary Produce Dealing).
Class 14: *Public and Professional Activity—Health and Education* (Religion and Social Welfare; Health, Hospitals, etc.; Education).
Class 15: *Public and Professional Activity—Other* (Public Authority Activities n.e.i.; Defence: Enlisted Personnel; Defence: Civilian Employees; Law, Order and Public Safety; Other Professional).
Class 16: *Hotels, Boarding Houses and Restaurants* (as per Census—Group K, Sub-Group 3).
Class 17: *Recreation and Personal Services* (Amusement, Sport and Recreation; Private Domestic Service; Other Personal Services).
Class 18: *Other Industries* (Other Industries—Group L, and Industry Inadequately Described or Not Stated—Group M).

THE DEBATE ON INTEREST

The deflationary measures[1] announced last November by the Federal Treasurer seem to have ushered in a period of experimentation, certainly of unforeseeable shifts in Australian economic policy. Those afar off can only guess at the factions wheeling about on the Canberra field. In modest contribution to the debate on interest rates, this article discusses four points: (I) The crux of the financial institution question is not quite that their activities are "excessive", but that they are not subject to *flexible* control. (II) "Flow" devices of control such as interest cannot for the foreseeable future be relied on to provide effective regulation of the financial sector. (III) The rise to higher interest and yields, while in itself improving little the power of monetary policy to cure inflation, at least makes more possible a flexible interest policy. (IV) Those opposed to high interest on socio-economic grounds must now adopt some more reasonable statement of their attitude.

I

Financial institutions are commonly accused of having assumed excessive proportions in relation to banking proper, and a table in the 1960 Report of the Reserve Bank (p. 13) shows their fast growth. The Radcliffe Report has focussed our thinking on how the community is persuaded to transfer cash and trading/savings bank deposits to financial institutions in exchange for deposit and other claims on them. Neither these nor subsequent transactions by the institutions in question reduce bank deposits; instead time and savings deposits suffer at the expense of current, and holders of the latter are reshuffled. Meanwhile the financial liabilities and assets created constitute in some sense an addition to the conventionally understood money supply. Understanding the monetary processes of their build up and potential run-down is more helpful than meditation on the money-like character of the items. A different, but important, phenomenon is trade credit, stretching the settlement period of which can cushion monetary restrictions. The Radcliffe Report is led to affirm that "spending is not limited by the amount of money in existence; but it is related to the amount of money people think they can get hold of, whether by receipts of income (for instance from sales), by disposal of capital assets or by borrowing."[2]

[1] These included increases in bank overdraft and deposit rates, limiting of tax deductibility of interest on non-bank deposits and convertible notes, and a coming requirement that assurance companies and superannuation funds hold a minimum 30% of investments or assets in public securities. Subsequent developments include a rise in security yields, alteration of the 30% proposal to a tax incentive scheme, and dropping of the non-deductibility of interest on non-bank deposits.

[2] *Report* (Cmnd. 827, 1959), para. 390. In a recent, somewhat perverse article (*American Economic Review*, Sept., 1960), J. G. Gurley finds this thinking vague and hampering for his analysis of the liquidity problem (p. 666).

How shall one decide if the activities of financial institutions have become "excessive"? International comparisons can be of only limited relevance; and reference to London and New York is perhaps best omitted, when these institutions have flourished there despite a context of flexible interest rates. Proof enough seems to come from the relatively fast growth of financial institutions and hire purchase outstandings. Yet the latter item has its misleading side, for a good deal is offset by constriction of bank lending and the money supply. The community has chosen, albeit been persuaded, to exercise more purchasing power than the authorities have been willing to supply. A loose parallel exists between growth in the cheque habit consequent on the 1844 restriction on the English note issue and growth in purchasing power made available through financial institutions. To some degree the community *needed* the extra purchasing power it made for itself by causing the restricted supply of bank deposits to revolve through financial institutions to finance additional lending.

Hence the accusation must rather be that at some point the extra purchasing power exceeded the offset to the authorities' restriction of the money supply, and excess demand is proved by statistics of prices, output and resources in key domains. The difficulty of this circumstantial case is that evidence and interpretation are to some extent opinion. Hire purchase companies may question to what degree inflationary pressures are to be ascribed to their activities in preference to other causes. They may assert their activities have made possible warranted expansions in industry and trade; whereupon one has the awkward task of demonstrating some socially undesirable allocation of resources. Of course, a run-down in overseas reserves is a graver sort of final effect than such relative *minutiae* as price increases or resource misallocations, so that the authorities can with wide support proceed to hit hire purchase and any other likely head.

But the purpose of these remarks is not really to oppose the contention that the activities of financial institutions have contributed to inflationary pressures and will again do so. Rather, my point is that their immunity from the *immediate* impact of monetary policy is what mattered in the past and is what requires to be corrected. That financial institutions can sooner or later be checked by a credit squeeze and other restrictive measures is clear from recent events;[3] but tightness to strangulation point of the money supply or interest maxima on financial deposits or loans are not the precise correctives required. If financial institutions are quasi-banks, soliciting deposits and other non-share funds and undertaking certain banking functions, and if experience is eloquent that banks need flexible guidance over especially their credit-creating operations, a similar need for flexible guidance over quasi-bank credit is suggested. Some means is required to allow

[3] Though only the future can judge the effectiveness of the measures concerning higher bank interest and security yields, especially after the decision of the Federal Government to re-allow the deductibility of interest on non-bank deposits for taxation purposes.

financial institution lending to expand and to force it to contract in a manner roughly parallel with bank credit proper.

What is required, in principle, is that the government draw up rules of the game for financial institutions[4] in the same way as it has done over a long period for banks, and that flexible means of control be placed in the hands of the central bank. Before and after the November measures, one heard that higher interest would "bring the financial sector under control". In the event institutions were dealt two punches, one above and the other below the belt, and flexible control is about as far off as ever. The fundamental problem remains that the central bank has no immediate guiding mechanism over a large part of the lending power of the community.

Still, some will object, is not interest manipulation the way and has not the corner been turned in this respect?

II

Financial institutions may perhaps be said to be open to three kinds of control—direct regulation of operations, ratio devices respecting liabilities and assets, and "flow" inducements to deposits and lending. The general problem is that the different institutions concerned probably need differing combinations of controls. The influence of the Radcliffe Report on what follows will be clear.

The "balloon" argument is the usual reply to advocacy of direct controls. Place restrictions on only this or that institution or operation, it is maintained, and bulges will occur elsewhere; and blanket controls would be a fearful prospect. Nevertheless, as a capital and money market is smaller, a case for direct regulation of some activities makes more sense. It has more chance of success, and alternative controls exerted through interest or ratio devices require some maturity of institutional and market conditions. If it is reasonable for the Reserve Bank to regulate the terms of certain banking operations, an inference arises that the same practice might usefully be extended to quasi-banks, hire purchase terms being a good example. Flexible controls (distinct from legislative alteration of the institutional setting) exercised at the discretion of the central bank appear to be one indispensable weapon for controlling classes of financial institutions.

Bank reserve and liquidity ratios were initially established to safeguard depositors' funds and eventually turned into devices of credit control. Similarly, a need may exist that financial institutions be required to observe some ratio arrangement for stability (e.g. a percentage of government securities to deposits or hire purchase outstandings), which might in time be used to limit borrowing and lending. In view of their diversified assets and liabilities, difficulties at once suggest themselves; and finance companies heavily engaged in hire pur-

[4] Newspaper reports indicate that the Federal Government has investigated further provisions respecting finance companies, though with no successful outcome so far. One would urge that now is the moment to implement some scheme of reformed rules, and not a time of renewed boom and crisis.

chase protest that ratio arrangements to control borrowing and lending would prove inequitable and unworkable.[5] If the Federal Government's current examination proves this to be so, at least a less objectionable case presents itself for some arrangement for stability purposes. Experience with this for certain institutions might later lead to a control weapon over lending as in the case of banks. The problem of legal definition of enterprise need not be intractable, for if a bank is serviceably defined as an institution having permission to act as such from the Federal Treasurer, some similarly subtle procedure should be feasible for other institutions.

The control that has come in for most attention is the "flow" influence over funds that can be exercised by interest rates and yields. The Radcliffe Report, it is true, threw out the idea that interest changes could be used to alter asset values and thus influence lending (para. 393)—which idea scarcely gets beyond the realm of speculation if the institutions concerned do not pay serious regard to ratios between security holdings and deposit liabilities and/or the forms of lending it is desired to check. Further, although the Bank of England has recently cast off inhibitions[6] against acting on long-term yields, one doubts the authorities could contemplate action important enough to implement this idea on a bold scale. The "flow" function of interest rates seems more significant and certainly so in the Australian context. To the present (May, 1961), the rise in bank deposit rates and security yields has reversed the previous flow from interest-bearing to bank-demand deposits, caused a fall in savings bank deposits and checked financial deposits. (Other measures have co-operated.) Nevertheless, important reservations must be held against the view that the rise in interest rates has "brought financial institutions under control". Flexible control over rates does not exist; and the inability of their manipulation to control financial institutions seems admitted by continued government investigation of other measures. In a more relaxed monetary situation the institutions in question will presumably be able to overcome the competition of trading bank interest, now that the proposal to end tax deductibility of interest on financial deposits has been abandoned.

The tentative conclusion[7] is that control of financial institutions —meaning primarily, but not exclusively, finance companies—would be best attempted through giving the Reserve Bank power to vary selected terms of operations,[8] setting ratios for *stability* purposes (i.e. in the first instance) if such proved feasible, and development of

[5] See, for example, the *Australian Financial Review* of 16th March, 1961, p. 52.

[6] Due, one understands, to the Bank's understandable desire to avoid tampering with the values of assets it sells, and has a hard job selling, to the financial community.

[7] Apology for difference between the above and that contained in an article of mine in the *Australian Quarterly* (Dec., 1960) is probably unnecessary, since everybody's thoughts on financial institutions are evolving fast.

[8] Sir Roy Harrod is reported in the *Financial Review* of 23/2/61 (p. 4) to have criticised over-use of hire purchase controls as a policy weapon.

a flexible interest rate policy (discussed in III). Pending the feasibility of the last two methods, most reliance must be placed on the first, the terms in question being chiefly amount of deposit and length of payment. Maximum borrowing and charge rates could usefully be set as "rules of the game" designed to curb the unprincipled finance company; but exact regulation of rates would be undesirable economically and politically. Whether the interest paid on deposits should be deductible is, neglecting the pressure of factions, a deep question turning on the effects of the operations of financial institutions and the status the authorities finally decide to accord them. Certainly, deductibility is not a right to be assumed. At all events, tax modifications are no substitute for flexible controls; they are shock tactics, able to be used and best only used infrequently to change the rules of the game.

A different suggestion sometimes heard is that the banks should be, or should have been, allowed to enter (directly, as against through subsidiaries) the hire purchase field, etc., and in other ways take over the lending functions of financial institutions. This would have the merit of concentrating lending where it can be most effectively controlled. Weighty objections come, however, from social and political opposition, dangers inherent in the increased bank lending and money creation implied—not least the added scope thus given financial institutions—, and the fact that bank would tend to assume a yet more powerful role. The replacement of the financial hegemony of the banks by a better populated financial sector is no bad thing; and overseas experience suggests financial institutions are here to stay, no matter what freedom may be granted bank operations. If, finally, financial institutions find that the various types of control proposed for their quasi-banking functions have all insuperable objections, perhaps the onus is on them to suggest effective alternatives. If none exists, the institutions concerned should, it would seem, be deemed uncontrollable in the public interest and required to quit the scene.

III

Prior to the changes introduced last November, strong claims were heard that higher interest rates, and by implication monetary policy, could come close to ending Australia's inflation problem.[9] We may usefully enquire, (a) in what respects the weapons or conditions of monetary policy have been improved, and (b) whether monetary policy will now have effective or at least better success in correcting inflation.

(a) The rise in interest rates (security yields as well as bank interest) co-operated in checking the 1960 boom, by setting up corrective flow effects on funds and to some extent by making bank credit more costly. Monetary policy has thus been given greater room in which to move; but the true improvement required here is that bank interest

[9] For example, Professor Bowen in the August 1960 *Economic Record*, pp. 320-21.

acquire flexibility. If rates jam under a 7% ceiling with the bulk of overdrafts clustered there, the economy may simply accustom itself to higher rates when monetary stringency ends and the intense demand for capital in a limited market renews itself. By what means could a flexible interest policy be implemented? One possibility is development of the Reserve Bank's lending rate: while the purpose of central bank loans is, of course, to assist the trading banks meet required ratios and not to create funds for relending, by keeping ratios tight the Reserve Bank might through its own lending rate influence bank interest charges. Variations in it would strengthen any request for changes in bank rates, and only a development of existing Reserve Bank lending practice would be involved. Further, the central bank could strengthen pressure by casting off the secretive atmosphere surrounding changes in its lending rate and cultivating the impact of a publicly proclaimed discount rate on business opinion. The reasons for past failure to announce one—presumably previous lack of meaning and no desire to incur the genial ridicule of the banks—are ending.

Another possibility[10] is that the Reserve Bank could, with the necessary concurrence of the Treasury and States, influence the interest rate structure by open market operations. Purchases and sales of securities in sufficient volume would alter yields, while the Bank could take steps to counter undesirable effects on banks' reserves. Conceivably such action might assist interest rate policy and is worth trial, though political opposition is the bugbear. A third possibility appears the most realistic for the foreseeable future, namely that the Reserve Bank will by agreement with the banks cause overdraft and deposit rates to fall and rise according to business trends. The circumstances of a limited capital market, pressure for overdraft accommodation, high dependence of banks on overdraft earnings and perhaps mere traditional practice combine to suggest that the bulk of overdrafts will bear the ceiling charge. Even if banks now have scope to lower and raise rates significantly, one must presume that they will bring about just as much variation as is virtually forced on them by the authorities (unless an improbable situation of slumped overdraft demand presented itself).

The conclusion is that higher bank interest and security yields represent some improvement in the setting of monetary policy in that a more realistic range of rates is now possible, but *flexibility* remains to be introduced. As usual, a combination of measures appears necessary: heavy reliance must be placed on agreements between the Reserve Bank and the banks, with action on security yields and development of the discount rate two complementary avenues. The first kind of reliance is unhealthy for social reasons, in that it accentuates the tendency to treat banks as quasi-nationalised institutions, with the authorities imposing their wishes and casting about for ways to guarantee the earnings banks may claim they are "entitled to". It would be better to develop more impersonal mechanisms of control.

[10] Suggested to me by Dr. R. F. Henderson.

(b) Is monetary policy, as now given a little further scope or as later markedly improved by the advent of flexible interest conditions, able to bring Australia's inflation problem acceptably under control? One should suppose the co-operation of other policy, especially fiscal, though the usual setting of balance of payments and pace of investment problems must be presumed. A personal scepticism is based on two reasons.

In the first place, it is to be feared that monetary policy, like fiscal, can curb Australian inflation only to the accompaniment of unacceptable checks to growth and employment. The role of flexible policy is to correct excess demand pressures, or "demand-pull" inflation in other words; its weapons are not designed to cure institutional factors responsible for "cost-push" inflation. Monetary policy operates by restricting the quantity of credit and the money supply and may now have increasing influence over interest rates; its more powerful partner, fiscal policy, can be used to curb categories of private and public expenditure. Now, to assert that monetary and fiscal weapons can "control" inflation is to say that correct timing and administration and forthright action can virtually eliminate excess demand, with no necessarily harmful or at least widespread repercussions on employment and growth. The pace of inflation will be "inched down", even if a separate attack on cost-push factors remains indubitably necessary. An example of this argument was furnished by Professor Arndt's article in the December, 1960 *Economic Record*: subject to the necessary co-operation of monetary policy and the existence of a somewhat distinct problem of cost inflation, the difficulties in the way of appropriate and effective use of fiscal policy to eliminate inflation are not economic but political and administrative.

The serious difficulty in the practical application of this reasoning is that, certainly in Australian conditions, given any freedom private and public expenditures proceed to create such an intensity of demand pressures that only severely restrictive measures can check them. The pendulum swings too far in each direction, and we get what the newspapers not incorrectly call a stop-go situation. It may possibly be easy in theory to calculate how much weight, and where, is necessary to eliminate excess demand; but in the actual contest cleverly conceived punches send the economy reeling.[11] Now, whether this objection has substance must turn on the evidence. There is no necessity whatsoever to controvert the Keynesian theory of using fiscal measures to equilibrate "aggregate supply and demand"—beguiling expressions summarising the immense activity of an entire economy—or to adopt the air of an anti-Keynesian. The simple point is whether monetary and

[11] It is not mere semantics to object that difficulties in the application of fiscal, and for that matter monetary, policy belong to the *applied economic* order and cannot all be termed political and administrative. Will Professor Arndt say that the obstacles to frequent alteration by the Reserve Bank of the S.R.D. and L.G.S. ratios are only "administrative"? The weapons of policy must be accepted as having their applied economic, as well as their undoubted political and administrative, difficulties.

fiscal measures can in practice be used to eliminate excess demand without provoking unacceptable checks to growth and employment; and the applied economics of the test are more important to enable us to reach decision than theoretical demonstration. The latter is only, though necessary, prologomena. Further, if one shifts the debate a little to take into account the socio-political objectives of Australia, headlong population and industrial expansion is clearly necessary if our northern neighbours are to be withstood 30-40 years hence. It is extraordinarily difficult to contemplate how nice adjustments of fiscal and monetary measures can eliminate just the excess of demand and leave growth not questionably damaged in the light of the country's long-range objectives.[12]

This argument leads to a second point concerning the institutional factors responsible for "cost-push" inflation. The machinery of wage increases; trade practices and situations militating against fuller competition; tariff-subsidised industry; excessive profit-taking, including high exaction of forced savings for investment; pay-roll and high sales taxes; excessive tax deductible allowances (e.g. selling expenses and expense accounts); non-taxing of capital gains in their various forms; sluggish productivity, especially in basic industries; psychology of inflation and "hedging" reactions—these and others are familiar features of the Augean stables of Australian inflation. While it would be improper to criticise monetary and fiscal measures on the ground that they only curb, and never cure, the operation of such factors, it is legitimate to stress that the latter limit and distort the effects of such weapons.

The causes of demand-pull and cost-push inflation can be usefully separated for analytical purposes, but less successfully in practice. To a large extent the operation of one set aids and abets that of the other. Institutional rigidities exercise a sort of ratchet effect, opposing price declines at a time of monetary and fiscal restriction, but taking advantage of excess demand and generating it as the occasion permits. It has been widely acknowledged that an attack on such factors is long overdue, even if it bristles with difficulties. For the moment it need only be said that claims for the corrective effects on inflation of monetary and fiscal policies as a whole, and *a fortiori* higher interest alone, have to be tempered in the light of the operation of cost-push factors in Australia.

IV

Much opinion in this part of the world has long resisted high interest for familiar reasons. This opposition is most rational as based on three grounds, concerning distribution, effects on enterprise, and interest burden. It seems a safe assumption, despite the impossibility of exact assessment, that on balance high interest operates in favour of

[12] It has been properly stressed that inflation out of hand damages sound growth. But it is difficult to be sure of the extent and areas of damage, quite apart from the issue of social judgment respecting what is "desirable" investment.

"haves" as against "have nots". Any assertion that graduated taxation is the remedy to the shift in distribution following on higher interest has little substance, since the necessary weight and pattern of taxation are not and are not likely to be levied. Next, low interest has been favoured as encouraging maximum industrial investment and as lessening the handicaps for smaller enterprise as against larger. The shift to higher interest will favour the larger industrial and rural undertakings, partly because they are best able to hold out to the share and loan market promise of high earnings and growth potential, and partly because of the accentuated tendency to invest retained profits. Thirdly, a shift to high interest means a heavier burden on the agricultural and personal sectors, both virtually unable to pass its cost on[13] and both in trouble enough at present respecting housing costs and rural credit. The increased cost of the national debt also has its importance.

Two good reasons appear to call for some change in traditional opposition to high interest. The first is that relatively low bank interest and yields permitted financial institutions to develop rapidly outside of central bank control and also weakened the security market, so that some degree of social harm may be presumed. While questionings exist as to how significant the interest weapon may prove to be to control financial institutions, some importance must be accorded it for the immediate future. If the government had been able to persist with its plan of non-deductibility of interest on non-bank deposits and if alternative weapons of control were available, this part of the case for high interest would be weaker. But a more fundamental reason justifying high interest is that the marginal efficiency of capital in Australia has undoubtedly risen high and will remain so in the foreseeable future, so that the cost of money must be high if the market is to do its work efficiently. While this point is weakened to the extent firms rely on other sources of capital than the loan and share markets, it retains much force. In consequence, some modification is called for of post-war attitudes: we were too much influenced towards low interest by the Keynesian economics of a very differently situated country and of a world concentrated on the danger of avoiding slump and the stationary state, whereas the pace and prospects of growth in present Australia are a different reality.

Does all this mean, then, that economic facts force us to acquiesce in the quasi-permanent prospect of high interest, traditional and Labour attitudes notwithstanding? This appears so, even if two possible and worthwhile sources of modification of a generally high level suggest themselves. For social reasons, special schemes offering low interest should be provided for rural credit and particularly housing; and one would like to add small business, though economic difficulties

[13] It is ironical but normal that the upsurge in bank advances and run-down in reserves, which occasioned the move to higher interest, were mostly due to the manufacturing and commercial sectors. Cf. the June, 1960 classification of advances (*Australian Banking Statistics*, July, 1960).

grow here. It is a matter of no small social injustice that persons are obliged to assume heavy, long-term debt to house their families adequately. Schemes to assist housing and smaller undertakings, rural and perhaps general, may have some success; though a climate of high interest scarcely assists and, of course, has some impact on all prices. In the second place, a reasonable hope exists that some recasting of the rules of the game and strengthening of the market in Australia would improve the competitive terms for money as well as for all goods and services. That is, some resolute reform of the kind of institutional rigidities listed above (III, b) would markedly improve the work of policy weapons in controlling inflation, demand, and the allocation of supplies; and beneficial effects could be expected in the loan and money markets.

Though circumstances may demand the restraints of high interest from time to time, one would for imperious social reasons prefer to see low-centred,[14] flexible rates typically prevailing, as opposed to unduly high rates and yields. A plea for low interest can be made without appealing to the example of communist countries, whatever that lesson may mean, or to tired socialist doctrines, or to inappropriately applied Keynesian investment theory. Quite the worst feature of high interest, to my mind, is the handicap placed on small enterprise; for the crucial question of the second half of our century is—not merely economic growth, but also—the survival of the private enterprise, market economy as against the communist, centrally planned version. Until overwhelming reasons to the contrary appear, one would prefer to believe that the market economy can be strengthened by reformed rules of the game, and made to work better to obviate inflationary pressures, to improve competition and productivity, and to create the money market conditions at least opening up the possibility of low-centered, flexible interest rates.

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[14] "Low" and "high" rates are relative terms, and it is difficult to refer them to some norm. I have in mind as low about 3% on long-term securities and 4-5% on overdrafts, and as high 5-6% and 7-8%. Cf. Radcliffe *Report*, paras. 442-43.

THE 1961 BASIC WAGE JUDGMENT AND WAGE POLICY*

1. The Commission's New Procedures

The Commonwealth Arbitration Commission has announced in its latest Judgment an important change in its procedure for basic wage fixation. Instead of the system of annual enquiries which has operated since 1956, there are to be two steps in the determination of the basic wage. First, it proposes to consider the level of the real basic wage on the basis of "a review of the economy generally and *in particular of productivity increases*" to be undertaken every three or four years. "By adopting this procedure the Commission feels it will be able more properly to examine the economy and not to be too greatly influenced by short run changes from year to year." Secondly, the Commission proposes each year to "make the assumption that the effect of movements in the Consumer Price Index should be reflected in the Basic Wage unless we are persuaded to the contrary by those seeking to oppose the change. . . . The onus will be on the party opposing such an alteration to show that it should not be made. If the price index has risen the unions may rely prima facie on that fact. It will then be for the employers to show that the increase in prices is of an exceptional character . . . so that it should not be reflected in a basic wage increase or that there is some special factor in the economy which would make it inadvisable to allow the increase."[1]

These proposals represent to some extent a return to the pre-1953 system of occasional reviews of the real basic wage, with quarterly automatic adjustments of the money basic wage to retail prices in the intervening period. The differences are that we are now to have regular reviews and only quasi-automatic annual price adjustments.

On the basis of productivity movements in the 1950s, the Commission has taken the 1960 real basic wage as a standard or starting point. The 12/- increase awarded in this Judgment is to be regarded as the first of two or three adjustments to the Consumer Price Index. In two or three years' time the Commission will presumbaly consider to what extent the real basic wage should be adjusted in view of the movement in productivity in the intervening years.

These proposals have been well received on the whole. The unions see the new principles as giving them the substance of their case—a fair, or at least a stable, share of national product and a measure of protection against erosion of their real wage by price increases. The

* This article is based on papers delivered separately by the authors to two seminars. It has benefited from comments at these seminars and the authors acknowledge in particular the help given by Professor H. W. Arndt who read the final draft and made valuable suggestions for its improvement.

[1] Commonwealth Conciliation and Arbitration Commission, Basic Wage Judgment, 1961, (Mimeograph) pp. 14-16 (our italics). More frequent reviews are not excluded "in unusual circumstances".

employers must derive satisfaction from the rejection of fully automatic adjustments, the longer intervals between reviews and a mere 12/- increase in the weekly basic wage in contrast to the 52/- claimed by the unions.

Yet there are reasons for believing that the new procedures are likely to lead to greater distortions in the wage structure and to an aggravation of the rate of price rises with all its undesirable economic consequences—both of which the Commission is presumably anxious to avoid.[2] It is one of the tantalising things about wage policy that, while all parties agree that productivity increases provide the limit to real wage increases, they do not seem to have devised a method for ensuring the fulfilment of this principle without price increases, caused by wage and profit money-incomes rising ahead of productivity. Increases of wages and prices since 1950-51 are shown in the Table.

Since 1952-53—leaving behind the earlier abnormal war, post-war and Korean war years—real average weekly earnings have risen by 19 per cent, or at an average annual rate of about 2·2 per cent. The share of profits in national income and the rate of profit in the manufacturing sector[3] appear to have been fairly constant. It is reasonable to infer therefore that the rise in real earnings has been closely matched by the increase in productivity. But this rise in real incomes has been accompanied by a much greater rise in money wages and profits and a substantial increase in prices. In the eight years since 1952-53, average money earnings have risen by 48 per cent (from £15·45 to £22·89 a week) while the Consumer Price Index has increased by 24 per cent.[4] Over the same period, however, the index of nominal minimum (award) rates has risen by only 30 per cent. Corrected for Consumer Price movements, the rise in real award rates has been 5 per cent. The Federal basic wage, even allowing for the recent increase of 12/-, has risen still less—by 25 per cent—so that the real basic wage has remained constant. On the basis of these figures, it is difficult to argue that the Commission has been over-generous in its awards. Certainly any workers on award rates have lagged well behind in the general rise of wage and profit incomes.

2. *Sources of Price Increases*

Discussion of wage-price problems sometimes appears to suggest that price rises are caused wholly or largely by money wages

[2] "We are confined to the legislation under which we act and, in particular, in basic wage cases we have the function of deciding only what is a just and reasonable basic wage. This does not mean, of course, that we have not to consider seriously the probable effects of our decision on the economy". Judgment, p. 3.

[3] See K. J. Hancock, "Wage Policy and Price Stability in Australia", *Economic Journal*, September, 1960, Vol. LXX, No. 279, p. 546.

[4] It should be noted in passing that our price experience in the first seven years of this period—i.e. up to 1960—is squarely in the middle of the range of price experiences over the same period in, for instance, the highly relevant group of twenty countries examined by the O.E.E.C. experts in their Report on *The Problem of Rising Prices* (O.E.E.C., Paris, 1961) Ch. II.

Wages and Prices, 1950-51 to 1960-61

Year	Annual Percentage Changes					Nominal Federal Weekly Basic Wage (Av. 6 Cap. Cities) Shillings
	Nominal Minimum Weekly Wage Rate Index—(Adult Males) A	Nominal Average Weekly Earnings per Male Unit employed (All Industries) B	Consumer Price Index	A adjusted for Consumer Price Index	B adjusted for Consumer Price Index	
1950-51	19.0	19.9	13.0	5·3	6.0	157·4
1951-52	21.8	22.5	22.5	—0.7	0.0	203·6
1952-53	10.9	9·3	9.4	1.4	—0.1	230·6
1953-54	2.6	5.0	2.0	0.6	2.9	236
1954-55	2.3	5.4	0.6	1.7	4.9	236a
1955-56	4.0	6·4	4.2	0.0	2.1	246b
1956-57	4.8	5.3	5.8	—1.1	—0·5	257c
1957-58	1.8	2.7	1.0	0.9	1.7	261c
1958-59	2·2	2.6	1.6	0·7	1.0	276b
1959-60	5·2	7·3	2.5	2·6	4·7	276d
1960-61	3.5	5.2	4.1	—0.6	1.1	276e
Average Annual Percentage Increase over last 8 years	3.3	5.0	2.7	0.6	2·2	

a. Margins increased to 2½ times 1937 margins. b. June. c. May.
d. Margins increased by 28 per cent.
e. Basic Wage increased to 288/- as from July, 1961.

Percentage Increases, 1952-53/1960-61.	
Consumer Price Index	23.8
Nominal Minimum Weekly Wage Rates	29.7
Real Minimum Weekly Wage Rates	4.8
Nominal Average Weekly Earnings	47·7
Real Average Weekly Earnings	19·3
Money Basic Wage (1952-53/July, 1962)	24.9
Real Basic Wage (1952-53/July, 1961)	—0·1

Sources: Commonwealth Bureau of Census and Statistics, Labour Reports and Monthly Review of Business Statistics.

rising ahead of productivity. It is worth stating therefore that, in historical fact, a significant part of the rise in the Consumer Price Index over the last eight years would have occurred even if wage-policy had been able to avoid what have been described[5] as autonomous, aggressive wage-increases.

First, part of the price rise is a straight statistical illusion. Even the improved and more frequently-grafted Consumer Price Index cannot avoid the upward bias of price indexes. The bias results from their failure to allow fully for quality-improvements and for the introduction of new and better products. Moreover, they exclude less standardised goods where productivity improvements and

[5] By Sir Dennis Robertson (following Machlup) in his Marshall Lectures for 1960, *Growth, Wages, Money* (C.U.P., 1961), pp. 32-35.

price reductions may be most likely to occur; and their fixed weighting does not allow for the economical adjustment of consumption patterns to changes in relative prices.

Secondly, part of the increases of prices recorded in the Index were inevitable or desirable. Rent controls have been eased and the rise in the Index from this source represents to some extent the release of increases accumulated from the past. Public utility charges have been raised to catch up with cost increases which had occurred earlier. Indirect taxes have been raised in order to reduce private spending power. Also inevitable were price rises due to higher import prices, and to higher prices for exportable goods like meat and dried fruits whose export prices have risen. These increases have been less than offset by falls in the export prices of wool and metals which are lightly weighted in the Index; and by falls in the export prices of wheat and butter of which the home-prices are stabilised.

Thirdly, Government policy in fields other than wage policy has been less than perfect. It has not always been able to avoid excess demand and over-full employment—notably in 1955 and perhaps also in 1960—which has led to some demand-induced inflation of wages, profits and prices. It is arguable also that the Government has not been active enough, with tax and social service policies, in correcting unsatisfactory developments in the distribution of income. The mechanism of increasing money wages has been left to play an unduly large role in distributing the benefits of higher export prices to wage-earners[6] and in attempting to maintain or improve the relationship of wages to profits.

3. Price Increases Caused by Wage Increases

While emphasising that the price index has for these reasons risen independently of wages, we certainly do not wish to deny that wage-increases can play, and have played, an independent role in causing price increases. Indeed, modern industrial economies are undoubtedly biased in favour of wage increases which, on the average, tend to be in excess of productivity increases. Thus Schultze[7] has explained the inflation in the United States in 1955-57, a period in which there was no over-all excess demand, as being due to excess demand in particular sectors, especially cars and housing. The resulting price, profit and wage increases in these sectors were not

[6] The most obvious example of this deficiency in Government policy lies outside our period—the 1949-51 boom in export prices was accompanied by an increase of average weekly earnings of 47 per cent in two years. This increase of money-incomes not only aggravated inflationary developments which might instead have been damped by appropriate policies in the field of exchange rate and export taxes; but it must also have created expectations about the practicable rate of increase of money incomes which must have influenced income-demands later in the 1950s. So an induced wage-inflation may lay the foundations for a later autonomous, aggressive wage-inflation.

[7] Charles L. Schultze, *Recent Inflation in the United States,* Study Paper No. 1, prepared for the Study of Employment, Growth and Price Levels, by the Joint Economic Committee of the Congress of the United States (1959).

offset by decreases in other sectors where demand was weaker—which would have preserved price stability and a desirable mobility of resources. Instead the lagging sectors strove to keep a contented and productive labour force by also raising their wage rates and, perforce, their prices.[8]

Schultze also shows the inflationary bias that exists without even any excess demand in particular sectors. It is inevitable that some firms will enjoy greater than average productivity increases. They will be least likely to use their higher returns to reduce prices, which would spoil their markets and put them in bad odour with their competitors. Instead, they will strengthen their position on the product market by improving the quality of their product and by increasing their selling expenditures. They will strengthen their position in the labour market by increasing wages, which will earn them a reputation as good employers and strengthen their ability to recruit a contented and productive labour force. They will strengthen their position in the capital market by taking at least a corresponding increase in their profits, part of which will go to reserves for internal finance, and part to dividends, making it easier for them to raise external capital when they want it. Firms enjoying less than average productivity increases will be forced to try to match these wage and profit increases in order to maintain their supply of labour and capital. They, however, will have to raise their prices to do so, thus setting off a wage-price spiral.

In the past, this phenomenon of cost-determined wage and price increases was prevented from continuing indefinitely by a significant degree of chronic unemployment, by occasional deep depressions and by the greater predominance of agriculture and other industries where prices, profits and wages were demand-determined. Today, these forces are too weak to break through the ratchets which hold up costs and prices and so creeping inflation continues, even through recession. For these reasons, then, even an atomistic system of wage determination will be biased in favour of wage increases in excess of productivity increases with consequent price rises.

This tendency towards creeping inflation is likely to be aggravated by any centralised system of wage-fixing which, like Australia's, does not possess powers to set maximum as well as minimum wages. Widespread sectoral wage increases take place as described above, independently of the awards of wage-fixing authorities; they are over-award payments, often under the guise of incentive payments, attendance-money and other fringe benefits. When the central wage-fixing machinery comes in to review the situation, it is likely as a result to increase award rates, but hardly any part of the increase will be absorbed by over-award payments. They will usually

[8] The price increase in the lagging sectors was aggravated, Schultze points out, by the rise in unit costs as output fell and overhead costs (which are a rising proportion of total costs in modern industrial conditions) had to be spread over the smaller output.

continue to be added to the new award rates, especially when the over-award payments have been disguised in various forms. Once all firms are faced with a substantial increase in award rates, each firm is likely to give way to pressure from its employees and their unions to maintain over-award payments. It knows that all firms are in the same situation. The increase is too large to be absorbed out of profits but can be covered by higher prices. Unless a firm is in an unsheltered industry, it has no fear that it will lose markets to its competitors who will be reacting similarly; or that industry generally will be able to sell less to consumers whose money incomes have risen sufficiently to cover the cost.

In this situation, a central wage policy tends inevitably to duplicate the results already achieved by the market over much of the economy. A national wage policy then becomes a built-in wage-inflationary device. Every time award rates are increased to bring them up to market rates, the latter rise also and the gap between award and market rates is maintained. Some confirmation of this view is found in a comparison of columns A. and B. in the table of wages and prices. From 1953-54 on, increases in award rates as shown in column A are associated in every year with larger increases in average earnings. The result is that while award rates rose by 30 per cent between 1952-53 and 1960-61, average earnings increased by 48 per cent. In recent months, despite the existence of a substantial margin of unemployment, isolated attempts by employers to absorb the 12/- Basic Wage increase in over-award payments have been successfully resisted by unions.

4. The Review of Productivity and Wage Inflation

The main difficulty then with the Commission's wage policy in recent years is the fact that award increases are not absorbed sufficiently by over-award payments. How will the new procedures affect this problem? There are strong grounds for believing that they could well magnify the problem and lead to a greater pressure on prices without helping those on award rates who provide the main, if not sole, justification for the Commission's adjustment of award rates. At the risk of being tedious, let us analyse a number of hypothetical situations to clarify the point. Let us assume that productivity increases at, say, 2 per cent a year.[9] If a review is to take place at the end of four years, the basic wage would be raised by 8 per cent in order to take up its share of productivity. In the meantime, however, the increased productivity as it occurred would necessarily have been distributed somewhere—to employers in the

[9] In so lightly making this assumption, which may not be too unrealistic, we should not fail to have full sympathy with the Commission's cry from the heart on the problem of measuring productivity: "Sir Douglas emphasized that his was an approximate measure. Unfortunately we cannot award approximate increases but we have to make a decision as to actual amounts". Judgment, p. 18.

form of higher profits, to consumers in the form of lower prices, and to wage earners in the form of over-award payments.[10]

Consider first the case where productivity increases have been entirely absorbed by profits, so that the general price level has remained constant and no wage adjustments have been granted. At the end of the fourth year, the basic wage will be raised by 8 per cent. But this increase will not come out of the larger profits earned in the previous four years. These profits will have been distributed to dividends or ploughed back into the business—in either case they are irretrievably lost to wage earners. The 8 per cent increase in the real basic wage will affects profits only in the *next* four years. For a short while after wages rise, profit rates may be expected to fall back to normal but, with the steady march of productivity increases, they will rise again above normal levels. *The long lag of the real basic wage behind the increase in productivity will thus result in average profit rates being higher than the normal rates of the past.* The longer the lag, the greater the rise of profit rates.

Assume now that productivity increases are entirely passed on to the consumer in lower prices. In this case, as annual adjustments of wages to prices are made, successive price reductions will occur as award wages are made to disgorge the real wage increases resulting from productivity-induced price reductions. But, at the end of the fourth year, the real basic wage will be raised by 8 per cent. Initially, this will lead to a rising wage-price spiral as the accumulated productivity increases of four years are applied to the basic wage in one dose. But the continuing increase in productivity will again bring down the price level, setting off another downward price-wage spiral. In this case, therefore, the lag of real wages behind productivity will not only be to the disadvantage of the wage earner as before, but the use of Consumer Price Index adjustments to force the lag will produce unnecessary price fluctuations—with prices rising in the early part of each four-year period and thereafter falling to the end of the period. It is clear that, *when prices respond fully to productivity increases, money wages should be left alone.* In other words, there should be no lag in the real wage adjustments.

Finally, assume that over-award payments take up wage earners' full proportionate share of productivity increases as these occur,[11] so that the price level has been stable. When the 8 per cent increase in the basic wage is awarded at the end of four years, two difficulties are likely to arise. First, even if employers absorb the increased award rates into their over-award payments, some wage-earners will have been receiving little or no over-award payments. The rise in

[10] For purposes of completeness quality improvements and increased selling costs should also be included. Analytically, the former may be lumped with lower prices although they are not likely, in statistical practice, to bring about a fall in the price index. The latter may be considered as an offset to productivity increases.

[11] This means that gross profit margins will remain constant and that, with constant capital/income ratios, the rate of return on capital will also stay constant.

their award rates will cause the total wage increase to be greater than the increase of productivity, so that prices will rise. Secondly, and more seriously, the increase in the basic wage may not be absorbed by over-award payments; it is more likely to be simply added to the wage increases which have already taken up labour's share of productivity. We have made reference to this phenomenon as a real problem in Australian wage determination. *The longer the lag between productivity increases and award wages, the greater the build up of over-award payments as unions apply pressure to take up their share of productivity and, therefore, the greater the price rise following award increases.*

The cases just analysed are somewhat artificial because in practice the three methods of productivity distribution would tend to take place concurrently, although to varying degrees. Experience in recent years would place the last method as perhaps the most dominant. It should be clear, however, that whatever combination of methods prevails, the longer the lag the less desirable the consequences for those on award rates and for price stability. The proposal for a lengthening of the interval betwen reviews to a three to four year basis is likely, therefore, to magnify the difficulties which have been apparent in recent years despite fairly modest increases in award rates. *We may expect that the new procedures will not only fail, as have the old procedures which they replace, to do justice to those on award rates but will accentuate the increase in prices.*

5. The Adjustment of Wages to the Price Index

The drawbacks of the new procedures are emphasized when the proposed system of annual quasi-automatic adjustment of wages to prices is examined. The Commission announces that a change in the Consumer Price Index will now be taken as prima facie evidence for a wage change. It states, however, that some price changes do not justify offsetting wage changes. A full appreciation of the implications of this reservation on the one hand casts doubt on the wisdom of distinguishing between the annual adjustments of wages to prices and the less frequent reviews of productivity; and, on the other, suggests that there are very few situations in which wages should be increased as a result of price increases.

So long as money-wage rates keep pace with productivity and with profit-rates, as is intended by the periodic review of the economy, the general price level should be stable, so that the provision for adjustments of wages to prices will be irrelevant. Prices may vary, however, from a number of causes.[12] First, there may be changes in seasonal conditions or in import prices. These represent changes in the economy's real income (or, in one sense, in its productivity) from which the wage earner cannot be insulated by

[12] Of course, it is one thing to distinguish between these causes analytically, it is another to try to identify their statistical magnitudes in practice.

changes in his money wages except, to a small extent, at the expense or to the benefit of relatively-fixed income recipients.

Second, prices may be increased as a result of Government policy—for instance, by rises in rents and public utility charges and by rises in indirect taxes. This represents a deliberate attempt by the Government to redistribute incomes to particular sectors at the expense of other sectors, including wage-earners.

Hardship could, of course, arise for the low income groups from these first two types of price increases. It may be questioned, however, whether the alleviation of such hardship should be carried out through the clumsy and self-defeating process of a general wage increase which raises prices and which does not discriminate between the low and the high wage-earner. It would surely be more appropriate to use other instruments of Government policy, notably changes in taxation and social services.

Third, prices may rise with corresponding increases in wages and profits. This can happen in conditions of excess demand, or in the cases discussed earlier of differential sectoral increases in demand or in productivity. Here there has been no burden on wage-earners as a result of the higher prices—their wages have already increased along with profits. A further increase of wages and, inevitably, of profits would merely aggravate the inflation.

Fourth, prices may rise as a result of higher profit margins—a situation which could arise because of higher export prices or, in the sheltered sectors of the economy, because of what may be described as increased monopolistic practices. With this type of price rise alone there may appear to be a prima facie case for a rise in wages since a shift to profits has occurred. Thus, for instance, inflated export incomes, accompanied by higher prices of exportable goods, could be redistributed to the wage-earner through a wage increase which in turn would lead to higher prices generally. These higher prices of exportable goods, of course, constitute both an improvement in the terms of trade and an increase in effective productivity, and, therefore, justify a rise in *real* wages.[13]

The use of a rise in money wages and in the price level as the mechanism of redistributing the gains from international trade is, however, hardly an ideal arrangement. Taxation and, if necessary, exchange rate adjustments would clearly be preferable alternatives. But again, in the historical and statutory setting of Commonwealth arbitration, can the Commission refuse a wage increase on the grounds that the Government *could* produce a desired redistribution more elegantly? *This problem calls for a drastic change in the procedures of*

[13] By the same token, a decline in export prices could be held to justify a reduction in wages and prices in order to restore partially the real incomes of exporters. It should be noted that we are concerned here with durable changes in the terms of trade. For purposes of wage adjustments temporary and reversible changes in the terms of trade should be ignored in order to avoid fluctuations in wages and prices.

both the Commission and the Government in order to permit a co-ordination of wage and other economic policies. The prime responsibility for bringing about any such change rests squarely on the shoulders of the Government.

As for the shift to profits resulting from what has been referred to as stronger monopolistic practices, a rise in wages could not be expected to redistribute these profits back to wage-earners. All that would happen would be for the general price level to rise. *Monopolistic practices must be tackled directly, not through higher wages,* and again the responsibility rests not on the Commission, but on the Government.

In general, therefore, price increases should not provide satisfactory grounds for wage increases. To repeat, the plight of the lower wage groups under rising prices cannot be alleviated more than temporarily by a general wage rise which accrues indiscriminately to all wage-earners. For social and economic reasons the remedy must be found elsewhere. In the only circumstances where there seems a strong prima facie case for raising wages, namely, higher export prices, there are more sensible ways of redistributing the higher export incomes by a wage increase although, to be fair, if confronted with this situation at present the only course open to the Commission is to grant a wage increase.

Two further points may be made in connection with the proposed adjustments of wages to the Consumer Price Index. First, it is difficult to see how, unless the adjustments are to be virtually automatic, these annual "enquiries" can be very different in scope and content from the periodic reviews. The difference would appear to be mainly legalistic—the onus of proof. At the periodic reviews, the unions would be required to show that productivity increases justified a particular real increase in the basic wage. At the annual enquiries, on the other hand, in the event of a rise in the Consumer Price Index, the onus would be on the employers to demonstrate to the Commission that the basic wage should not be fully adjusted to the rise in prices. They are unlikely to be able to prove their case, however, without extensive analysis of the causes of price increases and, in particular, of changes in productivity which are supposed to be discussed only at the less frequent reviews.[14]

Second, if productivity has risen ahead of wages and profits so that prices fall, the Commission's new procedure envisages that the money basic wage should be reduced to maintain its real value. We have seen that this would lead to an engineered fluctuation in prices. But there is a further difficulty. The Commission allows that there are circumstances (it instances specifically a rise in import prices) in which a price increase should not be matched by a wage increase. On the other hand, it implies that if prices fall because of a rise in

[14] In any case, it is to be feared that most employers will not be very strong in their opposition to wage increases, since they will expect to be able to cover them by price increases.

productivity, it will reduce money wages pending the periodic review of productivity at the end of three or four years. It apparently proposes in fact to create the anomalous situation in which the real basic wage will be allowed to fall in appropriate circumstances—but will not be allowed to rise in appropriate circumstances.

6. A Suggested Procedure for the Commission

We have argued that a disproportionate increase in the general level of money wages relative to productivity can result from one or more of several causes—overall excess demand, sectoral excess demand, differential sectoral productivity increases and nationally-administered minimum wage awards. Our main interest is in the last and we have tried to show that, because its awards are not absorbed by over-award payments, the Commission has tended to add to inflation. We have further tried to show that the new procedure proposed by the Commission would be a retrograde step because it would not only fail to achieve its objective of doing justice to those on award rates but would aggravate the existing tendency towards creeping inflation.

To imply that the system of annual review as practised since 1956 is more desirable than the new procedure is not to say that it is ideal. All that has been suggested above is that the weaknesses which exist in the system of annual enquiries are likely to be magnified by the new proposals. The inherent fallacy in the case for three to four yearly reviews appears in two ways. First there is the belief that somehow the accumulation of *past* productivity increases is still available for distribution to wage-earners by wage increases. A wage increase, of course, applies to future employment and production. If wages have been lagging behind productivity, the anomaly can be corrected *for the future* by an appropriate wage increase, provided that the higher level of productivity continues. But the loss of wages suffered by wage-earners *in the past* cannot be recaptured from future profits, unless it can be assumed that employers would be willing to lower their future profit rates.

Secondly, there is the erroneous view that long-term trends in the economy can be more accurately determined every four years rather than annually. The desire of the Commission to adjust the real basic wage to long-term economic trends rather than to short-run changes from year to year is commendable. But the Commission does not need to wait four years before it can re-assess these long-term trends. It can always look back four or any other number of years at an annual assessment of long-term trends. It is true, of course, that the economic circumstances of the next four years will be more clearly understood when these four years are past. But in wage policy, the Commission should be concerned with the future not the past. The past is only relevant as a guide to the future. And it is not likely to get a better guide about the future every four years rather than yearly. Moreover, the longer the interval between

adjustments the greater the risk of uncorrected injustices and anomalies continuing. As we have repeatedly emphasized, over a wide area, wages will not stop rising just because the Commission, in its anxiety to distinguish long-term trends more accurately, does not make real basic wage adjustments more often than once in four years. The uncertainties of economic events are of such a nature that wherever possible small and frequent adjustments in economic policy are likely to be less disturbing than large and infrequent ones. This is no less true of wage policy.

These considerations suggest that if we could devise a system in which changes in productivity could be reflected continuously in award wages or anticipated a short time ahead, we might avoid some of the difficulties encountered in the past. *The nearest practical approach to this would be for the Commission to anticipate a steady annual increase in productivity of, say, something over 2 per cent and, on the basis of this, to grant automatically every quarter a cumulative increase in all award wages of ½ per cent.* This would leave some margin for higher (over-award) payments in industries enjoying stronger than average increases in demand or productivity, and which wished to attract a larger labour force. The Commission should also indicate that this rate of increase will be maintained until further notice.

This quarterly adjustment should be made simultaneously to both the basic wage and to margins. There is little sense in having a general wage increase through the basic wage portion at one time and, at another, through a general increase in margins. This does not mean, however, that the same percentage increase must always be applied to both portions. It should be possible, whenever necessary, to give relatively larger or smaller increases to the less skilled, so long as the total increase does not exceed the amount consistent with price stability.[15]

With award rates determined on this basis of a regular increase, there should be no case for adjustments of the rates to price changes. Any price increase would be due to some factor arising directly from past wage increases or from factors not remediable by wage increases. Any fall in prices would similarly occur in circumstances where it was appropriate that real wages should rise. Every few years, of course, changes in the quarterly rate of wage increases

[15] The case for a joint determination of basic wage and margins is analyzed by P. H. Karmel and J. E. Isaac in *Wage Determination and Economic Stability*, (Economic Papers No. 14, Economic Society of Australia and New Zealand, N.S.W. Branch), p. 14 and p. 55. In his paper, Professor Karmel also suggests the desirability of determining award rates on the basis of a forward look at prospective productivity increases.

It is relevant to note that, if the Commission establishes the practice of reviewing the general level of margins in between basic wage reviews, some of our criticism against the long lag in basic wage reviews will lose force. In effect, such a procedure would allow general wage adjustments, alternately through the basic wage and margins, to take place every 1½-2 years.

might be made in the light of more accurate estimates of productivity.

This method could have some real advantages. First, the Commission's wage determinations would be leading, not following, the market. This should reduce the pressure for over-award payments and mitigate anomalies between employers with different attitudes to over-award payments. Secondly, employers would know what award increases they had to provide for and would be less anxious to dissipate productivity advantages in over-award payments, and in unwanted quality improvements and increases in selling costs. Third, all employers would be set a target of wage increases which they would be expected to absorb by productivity increases.

It will be understood, of course, that whatever contribution wage policy can make to price stability is not independent of Government policy in several directions—prevention of excess demand; attending to the needs of the lower wage groups by taxation and social services; and promoting the distribution of productivity gains to the consumer by measures directed against restrictive and monopolistic practices. The more closely these measures can be coordinated with wage policy, the more effective the latter is likely to be. We may, however, question the practicability of much coordination in the present procedural arrangements for wage determination.[16]

Finally, it may reasonably be assumed that the faster productivity increases, the easier the problems of wage policy become. Unions appear to be more interested in some target rate of increase of money incomes than in the relation of that rate to any kind of estimate of productivity increase. The question of promoting a more rapid increase of productivity requires, of course, the cooperative effort of the Government, employers and trade unions. In this context, the recent awakening in Australia, as well as in the United Kingdom, to the advantages of long-term perspective planning, in the sense in which it is practised in countries like France and Japan, would if followed up lead, we believe, to a substantial increase in the growth of productivity during the 1960s, above what is likely to be achieved in the absence of any such planning.

7. *The Alternative*

Our proposal for a policy of cumulative quarterly increase in wages in anticipation of productivity increases may fail to achieve its objective. After a trial period, it may be found that in effect we are no better off. Employers and unions may take the small and

[16] In addition to the difficulties of coordinating wage policy with general economic and social policy, the present legal technique of examination and cross-examination of expert witnesses in a public courtroom does not help towards a clear understanding of the complex economic issues involved in formulating wage policy. For an interesting discussion of this problem see J. R. Kerr, "Procedures in General Wage Cases in the Commonwealth Arbitration Commission", *The Journal of Industrial Relations*, October, 1961, Vol. III, No. 2.

frequent wage adjustments for granted, with over-award payments still being negotiated to absorb a substantial part of productivity increases. In this case, the Commission will be not really leading the market but still following it, and duplicating its wage increases. If maximum wage and price fixing are excluded two courses are left open—either to accept this situation as a matter of institutional necessity or to think in more radical terms along the following lines.

Briefly, the weight of our argument has been that statutory wage determination on a national scale, unless it carries effective powers to impose ceilings as well as floors to wages, serves little useful purpose under conditions of full employment, so long as over-award payments fail to absorb award increases. Whatever valuable contribution it may have made to wage-earners' standards of living in the pre-war days of chronic unemployment, it has, in the last decade, tended to develop into an instrument of wage inflation. The proposals of the 1961 Judgment are likely to aggravate this problem.

If this diagnosis is correct, the course of action which suggests itself would follow readily—*the abandonment of a centralized system of minimum wage determination, with its high degree of interdependence between wages in different industries and occupations.* First, we must accept the fact that, under full employment, the market is able to secure an appropriate share of productivity for a large percentage of wage-earners—at any rate, as much as employers will yield, with or without tribunals. This was convincingly demonstrated by the unions in their evidence in the 1959 Margins Case on the scale of over-award payments. The concern of the Commission has been for those on awards who tend to lag behind the rest. A method must be devised to do justice to these workers without at the same time raising the general level of wages and prices and defeating the very object of the Commission's concern. Under the existing statutory provisions it is difficult to expect the Commission to discriminate between those on award rates and those earning more than award wages, and to confine its increases to the former. The most obvious course is to withdraw the fixing of wages for the lagging sectors from the national arena where it has so far provided the basis for general wage increases. This could perhaps be done by setting up a number of narrowly-based tribunals which could attempt to follow the pattern of wages set by the market with a minimum delay but doing so, one hopes, as unobtrusively as possible so that the rest of the market would not regard the actions of these tribunals as a signal for immediate increases in its wages.

Second, the concept of a basic wage which is, at the same time, a national minimum as well as an integral and important part of every worker's wage would have to be abandoned. So long as this dual nature of the basic wage persists, it is impossible to confine a wage increase to those on the lowest level of wages. What might be envisaged instead is a minimum wage in the American sense, with

wages in individual industries and occupations determined independently of the national minimum. There will continue to be a risk that a rise in this minimum would in practice raise all wages as well. But by severing the formal connection between the national minmum wage and other wage rates, the likelihood of an automatic relationship is reduced. The task of determining this minimum from time to time would be all that would be left for a tribunal such as the Commission to do. It might in these circumstances be desirable for the Government to appoint a body comparable with the U.K. Council on Prices, Productivity, and Incomes, charged with the duty of reporting annually on the course of wages, prices and productivity, and recommending appropriate adjustments in the general wage level and in the wage structure. These reports could help to set the tone in wage negotiations and to influence Government economic policy.

8. Conclusion

The last section puts forward far-reaching proposals whose full implications would need to be carefully explored. The main object in this paper has been to consider how the Commission *as at present constituted* might reduce to a minimum any tendency for wage increases to provoke price increases. Nobody should pretend that the wage-price problem is easily solved. To those who believe in the importance of price stability it is the outstanding challenge of the modern economy.

This challenge is not met simply by suggestions, for example, that the best hope for price stability is for the Commission to refrain from increasing award rates. The great difficulty is to devise an arrangement for wage fixing which will not only keep prices stable but will fit in with the social and institutional requirements under which it must work. We suggest, to sum up, that a simple, but possibly effective, means of meeting these requirements is for the Commission to award a regular future increase in award rates, and to indicate that it intends to make no other variation in those rates until further notice.

The new proposals of the Commission provide an opportunity for a critical appraisal of wage policy in Australia. This article has been written in the hope of stimulating a wider and fuller discussion of an important economic and social problem.

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NOTES

CORNELIS WESTSTRATE: 1899-1961

The death of Professor Weststrate at the end of August was sudden and entirely unexpected: while his health had not been good for some two years or more, he was fully engaged in his professional and departmental duties to the last, and his passing was a shock to his family and friends.

Cornelis Weststrate arrived in New Zealand late in 1950 to succeed Professor A. H. Tocker in the Chair of Economics at Canterbury University College, his translation to this office being from the Professorship of Economics in the Faculty of Law of the University of Leyden. His reasons for coming here were personal rather than academic; he himself wrote: "Believing that my children would have a better position in a 'young' country less exposed to the risk of war, I resigned in 1950 to become Professor of Economics in . . . Christchurch".

Weststrate was born in the Netherlands and, after study at Utrecht, took a post as a lawyer in the Central Agricultural Bank, ultimately coming to head the Bank's legal division. His training incorporated some Economics, but he has recorded that a much deeper interest in this subject was stimulated during the depression. In 1937 he took his Doctorate in Law at Leyden with a dissertation entitled "Credit, Conjuncture and Credit Restrictions".

In 1939 he accepted appointment as Professor at Leyden; the date, of course, was ominous, and in fact the Occupation saw Weststrate repeatedly arrested by the Germans, and confined to a concentration camp in Holland. Characteristically, he used the enforced leisure of those days to pursue his studies and continue with his writing, both these activities being undertaken in the teeth of difficulties.

Immediately after the war he was honoured as a jurist by appointment as Counsellor to a special court for trying war criminals. And his University life at Leyden was exceptionally busy; not only had the ancient foundation to be reopened after a formal cessation of activities during the war, but a deliberate attempt was made to establish the social life of the University on a more liberal plane than had hitherto been the case. In all this Weststrate was fully engaged. And then, in 1949, came the decision to move to Christchurch.

He was then a man of 50, and the change was a big one. Language was not a problem; Weststrate's English was fluent, and he wrote it as freely and lucidly as he spoke it. Two differences at Canterbury impressed him; he noted, and thoroughly disapproved, our considerable numbers of part-time students. And he considered

the immense labour of marking examination scripts at the end of the year a clumsy and inefficient alternative to the oral examinations used at Leyden.

Weststrate took great interest in the general student life of the University. Noting that the new student often found the transition from school to lecture room a source of confusion and uncertainty, Weststrate engaged the interest of the Professorial Board, his colleagues and the senior students in organizing guidance for freshers; this is now well established as 'orientation' activities. He also organized some general lectures for all students, thereby setting a precedent which is still followed.

In the Department he lavished immense care on the content of courses and the structures of the B.A. and B.Com. Degrees. But he did not like committee work, and it was a sense of duty which led him to accept the Deanship of the Faculty of Commerce not long before his death. He also carried a very full teaching load, as his detailed course notes attest.

As an economist Weststrate was an eclectic. He derived great intellectual satisfaction from the use of theory; and he tempered this with doubts about the applicability of his theory to the real world. He was concerned to study the setting of economics in the broad conspectus of social studies, and this led him to an interest in subjects as diverse as Sociology and Business Administration. But his most sustained effort as an economist was in the study of economic systems, and in this field much of his writing on economics centres. It is apparent that Weststrate's thinking was influenced, in these aspects of his work, by the well-known exponent of economic systems, Eucken. Weststrate also took great interest in International Trade, and this was further stimulated by his coming to New Zealand, with its characteristic trade problems.

His earliest written work was intended as a guide for business men, and "The Practical Aspects of Company Law" remains in print in its fifth edition. After his appointment to Leyden, Weststrate wrote some papers, a monograph on the repayment of high war debts, and two substantial texts on his main field of interest, "Three Systems" and "Regulation of Economic Life".

He continued his writing in New Zealand with books on the New Zealand economy and the Dutch economy, both of which illustrate his concern with economic organisation as demonstrated by study of the shape of events and policy in the economies named. And he had very recently compiled a massive work, still in manuscript, on economic "Characterology".

Weststrate in his writing, his philosophy of economics and in his work as Head of Department regarded Economics more as a faculty than a subject. This accords well with the Australian view; less well with the traditional New Zealand one. And so his breadth of vision has been a novelty, a stimulus and a guide to his colleagues throughout New Zealand. He was sincere and very modest; beneath

some reserve of manner lay warmth and wit; he is being sadly missed.

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HIRE PURCHASE AND THE STABILITY OF CONSUMPTION

Summary

The argument of this paper may be summarised: Consumption expenditure depends upon the sum of households' income after tax *plus* the rise in outstanding hire purchase liabilities. Hence when hire purchase outstandings rise, say from zero, consumption rises. This higher level of consumption expenditure will only be maintained so long as hire purchase outstandings continue to rise by the same annual

amount. But outstandings will not continue to rise if personal disposable income is fixed, because a rise in outstandings necessitates a rise in hire purchase repayments and there is a limit to the ratio of repayments to income which people are prepared to undertake. Hence at some point consumption falls.

In essence this argument is that the average propensity to consume rises when hire purchase is introduced and falls subsequently. This proposition remains substantially true if personal disposable income is not fixed but is rising. Thus if national income is rising at a constant rate because of a rise in the work force, hire purchase outstandings will initially grow at a more rapid rate than national income in order to reach the acceptable repayments/income ratio for the existing population. Subsequently hire purchase outstandings must grow less rapidly at a rate equal to national income. This fall in the rate of growth of outstandings involves a lower average propensity to consume.

Finally, if national income falls in a recession it seems likely that hire purchase outstandings not merely do not rise but may fall sharply as the disemployed and people on short time seek to pay off their hire purchase contracts without entering into new contracts. This will cause the average propensity to consume to fall further. In the subsequent boom this process may be reversed.

The first two paragraphs of this summary suggest a once-for-all fluctuation in the average propensity to consume. The third paragraph suggests that the fluctuation may be perpetuated in a steady (or unsteady) cycle.

1. *Behaviour patterns*

Buying goods on hire purchase enables one to anticipate the material benefits of life. But the word "anticipate" is ambiguous. For if I borrow £10 this year and this enables me—on my income of £100—to spend £110, then next year when I repay this debt I may do any of three things: I may

(a) repay £10, not borrow, so my debts are zero and my consumption spending is £90;
(b) repay £10, borrow £10, so my debts are £10 and my consumption spending is £100;
(c) repay £10, borrow £20, so my debts are £20 and my consumption spending is £110.

These three cases involve respectively: temporary anticipation, permanent stationary anticipation, permanent cumulative anticipation.

These three behaviour patterns have an analogy in the way the community as a whole behaves. For the community may

(a) *reduce* its outstanding balances on hire purchase, with the result that consumption spending will fall *below* the pre-hire purchase level,

(b) *maintain* its outstanding balances unchanged, with the result that consumption spending will fall to the pre-hire purchase level,

(c) *raise* its outstanding balances with the result that consumption spending will be maintained at the higher level initiated by hire purchase.

2. *Hire purchase with fixed incomes*

For the community as a whole we may initially disregard temporary anticipation (i.e. pattern (a)) as a pattern of behaviour since on a large scale this would involve the euthanasia of the hire purchase finance houses. Moreover permanent cumulative anticipation is also not a tenable alternative if income is fixed, for the acceptable ratio of repayments to income sets a limit to the process of anticipation. If community income is fixed, the ultimate limit to anticipation is set by that income, at which point one would be buying bread and newspapers on hire purchase. In reality the limit is far short of this, although just what proportion of repayments to income people are prepared to aspire to is unknown.

The sequence of events following the introduction of hire purchase appears divisible into three distinguishable stages. These are illustrated in Table I. In the *first* stage, households hitherto spending the whole of their income of £100m. raise their spending on goods to £110m. with the aid of hire purchase finance. Thus consumption spending has shifted to a higher level at unchanged income. In the *second* stage, *new* hire purchase finance continues to be made additional to the relending of repayments, so that repayments and outstandings rise by a constant annual amount. However consumption spending remains unchanged at £110m. It is clear that the original upward shift in consumption spending is associated with a steady *growth* in outstanding liabilities. This is, for the community, the equivalent of pattern (c). In the *third* stage, the community has reached its limiting ratio of repayments to income. Consumption spending shifts back to its old position of £100m. At this position the community regularly spends 30% of its income on hire purchase repayments. This, for the community, is the equivalent of pattern (b). (In order to reduce this figure we would have to shift consumption spending below £100m.)

The conclusion is thus reached that the introduction of hire purchase involves a temporary upward shift in consumption and that consumption will ultimately revert to its old level. (But in the process there may be some major changes in the composition of consumer spending which may be permanent.) The consumption-income schedule maintains its higher position (and resources are transferred from investment) only so long as outstanding hire purchase liabilities are rising. When households reach their equilibrium repayments/income ratio outstanding liabilities cease rising, the consumption-income schedule shifts back to its old position and the original resource transfer from investment to consumption ceases.

TABLE I

	Year	(1) Income spent on: Consumer Goods = 100 − (2)	(2) Income spent on: Hire Purchase Repayments = $(3)_{t-1}$	(3) H.P. Finance spent on consumer goods*	(4) Total balances Outstanding = (3) − (2) cumulated	(5) Total consumption (1) + (3)
I	1	100	–	–	–	100
	2	100	–	10	10	110
II	3	90	10	20	20	110
	4	80	20	30	30	110
III	5	70	30	30	30	100
	6	70	30	30	30	100

*Finance assumed transferred from investment projects. Hence there is no multiplier effect.

3. *Hire purchase with rising incomes*

The condition, that outstanding balances must rise by a constant annual amount in order for the higher level of consumption to be maintained, may be re-stated to cover the case where national income is not fixed but rising. The condition then becomes that outstanding balances expressed as a proportion of national income must rise by a constant annual amount in order for the higher average propensity to consume to be maintained.

The validity of this re-statement may be seen by re-interpreting the figures in any row of Table I as percentages of the national income prevailing in that year. This is done for all rows. Then we can envisage the national income as rising secularly through time and the percentage figures specify the above condition. The condition may also be illustrated in Figure I where the condition for remaining on the higher consumption schedule OB is that the rise in outstandings remains a constant proportion of income as income rises.

At first sight it might seem that this condition is easier to satisfy than in the static case because, as the additions to the work force come to use hire purchase, they offset the failure of the "old" work force to raise its outstandings. This however is not correct. The new work force is making its contribution, EF in Figure 1, to ensure that the rise in outstandings remains a constant *proportion* of rising income-but it is doing nothing to offset the imminent contraction in FG to zero.

However, if national income is rising not because of rising work force but because of rising productivity, there is a possibility that the acceptable ratio of repayments to income may rise. After all, basic necessities are a declining proportion of the consumer's regimen and, for example, in the four years ending June, 1958, retail sales of

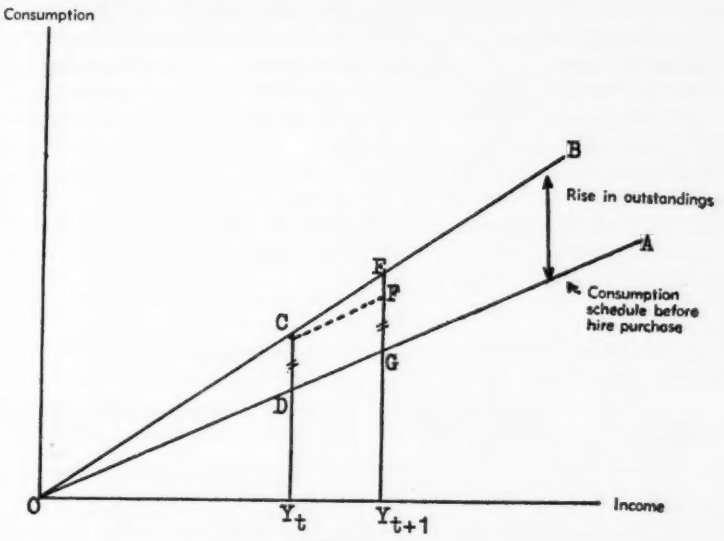

FIGURE 1

electrical goods rose 86% more than the rise in total retail sales. As a secular trend such a rise in the repayments/income might prove significant. Examination shows however that even if the *whole* of such increases in income were spent on repayments of greater hire purchase commitments, the annual rate of increase of income would have to equal the proportion by which the average propensity to consume was originally raised by hire purchase. It is quite unlikely therefore that a rise in the repayments/income ratio in the short term would offset the fall in the consumption schedule which occurs when the bulk of the work force has reached its equilibrium repayments/income ratio.

The conclusion thus remains unchanged that for practical purposes the initial appearance of hire purchase results in a rise followed by a fall in the average propensity to consume.

The statistics in Table II help to place this argument in perspective: In 1959-60 repayments to finance companies were estimated at £234m. This may be compared with £5,197m. personal income, of which £354m. (net) was allocated to personal savings other than through assurance funds. Although the annual increase in outstandings has been only of the order of 1% of personal income, the absolute figures are sufficiently large to warrant attention in an economy committed to high employment.

4. *Hire purchase with falling incomes*

The preceding two sections have considered situations in which household income is constant or rising. If household income falls temporarily, hire purchase is a destabilising influence for a further

reason. For if incomes fall suddenly, consumption spending seems certain to fall more sharply than in the absence of hire purchase. This is because some of those now disemployed or working on short time will make an attempt to use their financial resources for repayment of old hire purchase contracts and this will be at the expense of current consumption. Moreover these people will cease entering into new contracts. This of course is the pattern of behaviour we called "temporary anticipation", i.e. pattern (a). This behaviour pattern involves an actual fall in hire purchase liabilities and is most destabilising since it depresses consumption spending below normal as indicated in the opening paragraph of Section 1.

TABLE II

Retail Hire Purchase Operation of Financial Companies

As at 30th June	Total Balances Outstanding £m.	Annual Increase £m.	New Credit granted £m.	Repayments (residual) £m.
1948	21·8			
1949	33·7	11·9		
1950	52·1	18·4		
1951	69·7	17·6		
1952	78·3	8·6		
1953	88·8	10·5		
1954	132·4	43·6	120·9	77·3
1955	182·8	50·4	156	105·6
1956	212·9	30·1	175·4	145·3
1957	236·5	23·6	188·8	165·2
1958	296·7	60·2	235·3	175·1
1959	354·9	58·2	259·7	201·5
1960	421·9	67·0	301·3	234·3
1961	407·6	−14·3	252·8	267·1

Sources: Estimates for years preceding 1953 have been obtained from: D. C. Rowan, N. Runcie, "The Hire Purchase Problem in Australia", *Banca Nazionale Del Lavoro Quarterly Review*, March, 1957, p. 29, Table II. Figures for 1953 onwards have been obtained from Commonwealth Bureau of Census & Statistics, *Retail Hire Purchase Operations of Finance Business: Australia*, October, 1960 (Preliminary estimates), Table I.

This is not however the end of the story. For if the community reverts to pattern (a) and reduces outstandings proportionately more than national income, it is likely that this process will be reversed in the subsequent boom. That is outstandings will once again rise more rapidly than national income. This of course means that the consumption-income schedule has been shifted upwards again. Further, Professor G. S. L. Tucker has pointed out the possibility that in an inflationary boom the expectation of further price rises leads to a greater demand for hire purchase facilities since the real interest rate is reduced by the price rises. If inflation stimulates "temporary anticipation" in this way, consumption will rise more in the boom (and fall further in any subsequent recession).

5. *Conclusion*

The destabilising influence of hire purchase finance may be summarised in rather crude figures on a very short-term basis: During the three years ending June, 1960, hire purchase balances outstanding rose by around £60m. a year. The failure of outstanding balances to rise in 1960-61 represents a fall in consumption of £60m. If outstanding balances actually fall as seems likely, the drop in consumption expenditure is greater by the amount of that fall: In the four months ending May, 1961, hire purchase outstandings fell £34m. compared with a rise of £14m. in the same period of the previous year.[1]

On this view the current level of consumption spending at the existing level of the national income is lower than it would have been in the absence of hire purchase. When unemployment begins to fall significantly later this year we will presumably begin a new hire purchase cycle. Moreover this cycle may be magnified through the swings in consumption inducing changes in investment plans.

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[1] Commonwealth Statistician provisional figures on *Retail Hire Purchase Operations of Finance Business.* This does not include own finance provided by retailers.

AN EXPERIMENTAL APPROACH TO THE THEORY OF THE FIRM

The theory of the firm in economics is a logical starting point for a study of business organisation. Conventional economic theory can be used to predict how the firm will react to changes in certain market variables such as cost of production and demand although the predictions are not always successful. The micro-economic theory normally used makes two important assumptions—that the firm attempts to maximise profits and that the long-run cost function is U-shaped. Both these assumptions rest on shaky empirical evidence. Baumol, for instance, has recently suggested that firms maximise revenue subject to the minimum profit constraint,[1] and Smith has said that "There is no substantial evidence that the decline in unit costs stops before the maximum size of plant available for study if factor costs are held constant and the product is the same".[2]

Moving away from perfect competition, monopoly and monopolistic competition into the area of oligopoly, micro-economic theory becomes even less satisfactory. The difficulty with oligopoly is that the firms themselves can influence market conditions and they must take

[1] W. J. Baumol, *Business Behaviour, Value and Growth,* (New York: Macmillan, 1959), Ch. 6.

[2] C. A. Smith, "Survey of the Empirical Evidence on Economies of Scale", in *Business Concentration and Price Policy,* (Princeton: Princeton University Press, 1955), p. 229.

into account the price and output decisions of their competitors. The obvious need here is for a behavioural theory of the firm and some efforts have already been made in this direction.[3] One of the methods used by some of the investigators was the computor simulation of a specific type of duopoly.[4] Although this method has many advantages and is undoubtedly capable of making significant contributions to the theory of oligopoly, it is necessary to build into the system the appropriate decision rules on price, output, etc. These decision rules may be derived from micro-economic theory and the operation of the system may demonstrate some interesting consequences of using these rules, but the computor model cannot help us to determine which decision rules an organisation will use.

There have been many studies of pricing policies in markets which were far from being perfectly competitive and such studies undoubtedly enrich our knowledge of how business organisations react to their economic environment.[5] These, however, suffer from the deficiencies that much of the data is naturally kept confidential by the firms in question and also that the variables cannot be manipulated. The detection and measurement of exogenous influences are also difficult.

At least one other possibility exists, the use of the so-called business games, and this note is a preliminary report on the use of this method.[6] The essence of the business game is the making of business decisions on price, output, market research, sales expenditure, plant construction, capital raising and the like by two or more teams. Each decision covers a period of simulated time, say a month or a quarter, irrespective of the actual time between decisions. The results of the period's operations are calculated by an umpire and reported back to the groups. These results depend in part on the decisions of the other teams on price, etc., and in part on external market factors such as price elasticity of demand. It must be admitted that these business games are simplifications of reality. One facet of the real-life situation which is absent is the imperfect flow of information from sub-organisations up to top management and the influence of uncertainty absorption, filtration and down-right distortion on this information. Nevertheless, business gaming does afford the opportunity

[3] W. W. Cooper, "A Proposal for Extending the Theory of the Firm", *Quarterly Journal of Economics*, 1951, pp. 65, 87-109; R. M. Cyert and J. G. March, "Organizational Structure and Pricing Behaviour in an Oligopolistic Market", *American Economic Review*, 1955, pp. 45, 129-139; "Organizational Factors in the Theory of Oligopoly", *Quarterly Journal of Economics*, 1956, pp. 70, 44-64.

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[5] A. C. Cook, N. F. Dufty and E. H. Jones, "Full Cost Pricing in the Multi-Product Firm", *Economic Record*, 1956, pp. 32, 142-147; A. D. H. Kaplan, J. B. Dirlam and R. F. Lanzillotti, *Pricing in Big Business*, (Washington: Brookings Institute, 1958).

[6] For a discussion of the wider research potential of business games see W. R. Dill, "The Research Potential of Management Games", in *Proceedings of the National Symposium on Management Games*, (Lawrence: University of Kansas, 1959).

to explore hypotheses under conditions which resemble those found "in the field" but at the same time under a certain amount of control.[7]

The game used in the situation described here was devised and developed for use in the final year of the management diploma course of the Perth Technical College and was played over 26 decision periods (simulated months) by two teams of six. The students concerned were junior or middle rank executives, between 25 and 45 years of age, who were in final year of a four-year part-time course.

The discussion here will be largely concerned with price determination. Under duopoly price determination has usually been thought to depend on the form of the demand function and the price and output policies of the opposing duopolist. From Cournot onwards treatments of the duopoly problem have rested on various assumptions about the competitor's reactions.[8] The application of the theory of games to the duopoly problem has made it possible to handle a situation in which each duopolist has a number of price and output strategies open to him.[9] In the simulated duopoly described here the members of both teams had some knowledge of two person zero sum and non-zero sum games. This was of little use to them, however, as their knowledge of the pay-off functions was either meagre or non-existent as indeed it would be in most real cases. The number of strategies open to both duopolists was very large, making the problem far too big for hand computing techniques even if the pay-off functions had been known.

Although not specifically concerned with duopoly, Eiteman has suggested that price-output decisions are based largely on changes in the rate of inventory turnover. This procedure, of course, does not lead to profit maximising and Eiteman says that the reason for this behaviour is not opposition to marginal cost pricing policy but lack of knowledge of the demand function.[10]

The members of both teams taking part in the business game described here had received a thorough grounding in micro-economics and were fully aware of the advantages of marginal cost pricing. They made an attempt to determine the shape of their demand function but in this they were continually frustrated by changes in other variables. Each team was therefore forced to work on a trial and error basis, price changes were made and future price movements were planned

[7] For an interesting example of the purely laboratory approach see L. E. Fouraker and S. Siegel, *Bargaining and Group Decision-Making*, (New York: McGraw-Hill, 1960).

[8] Baumol, *op. cit.*, p. 15. Also see J. P. Mayberry, J. F. Nash and M. Shubik, "A Comparison of Treatments of a Duopoly Situation," *Econometrica*, 1953, pp. 21, 141-154.

[9] Even this necessitates certain assumptions about the nature of the competition between the duopolists. See R. Dorfman, P. A. Samuelson and R. M. Solow, *Linear Programming and Economic Analysis*, (New York: McGraw-Hill, 1958), Chapter 15. For a good account of the limitations of the theory of games see W. T. Dowsett, "Problems of Duopoly and the Theory of Games," *Economic Record*, 1959, pp. 35, 219-225.

[10] W. J. Eiteman, *Price Determination—Business Practice and Economic Theory*, (Ann Arbor: University of Michigan, 1949), pp. 14-22.

on the basis of the results obtained. The measure which both groups eventually used was the stock of finished goods unsold and as in Eiteman's model this was the most important single influence on price changes. The data are shown in Table 1 and Figures 1 and 2. The sales

TABLE 1

Selling Price, Sales and Stocks, Competing Groups

Period	Group A			Group B		
	Price (£)	Sales	Stock	Price (£)	Sales	Stock
1	10	4500	4500	10	4200	4500
2	10	5150	4500	10	4850	4800
3	10	5300	3850	10	5600	4450
4	10	5700	3550	10	4200	3850
5	10	4700	2850	10	6600	4650
6	10	6800	3150	10	5400	3050
7	10	6650	1350	10	6550	2650
8	10	5500	–	10	5800	1100
9	10	9350	–	10	7040	300
10	10	10105	–	10	1395	–
11	11	6795	–	10	6480	2735
12	10	9440	2000	10	5480	6255
13	10	13630	2560	10	7880	10775
14	11	11150	–	10	8660	12895
15	11	10295	–	10	8305	10235
16	11	15980	–	10	7860	7930
17	12	16255	–	10	12090	7570
18	13	10000	–	10	14420	5480
19	11	21780	4555	12	8550	1060
20	12	11720	–	10	17390	4510
21	12	18960	2140	10	16500	2120
22	12	30030	–	11	14450	620
23	13	18640	–	11	14880	1170
24	13	39720	–	12	10600	790
25	15	3010	–	10	32100	5740
26	12	49420	6130	13	8780	–

of both groups increased over time as they endeavoured to shift their demand curves to the right by expenditure on advertising, additional salesmen and product development. It can be seen from the data that Group B took longer to learn (using the term in the sense of organisational learning) that the level of finished goods could be controlled by price changes. Another interesting feature was that although both teams built additional productive capacity the minimum cost level of output for each plant size was taken as given, as part of the definition of the situation. Adjustment of finished goods stocks by varying output was not considered.

March and Simon have said that choice is always exercised with respect to a limited, approximate, simplified model of the real situation.[11] Action can usually be traced back to the stimulus of some kind

[11] J. G. March and H. A. Simon, *Organisations,* (New York: Wiley, 1958), p. 139.

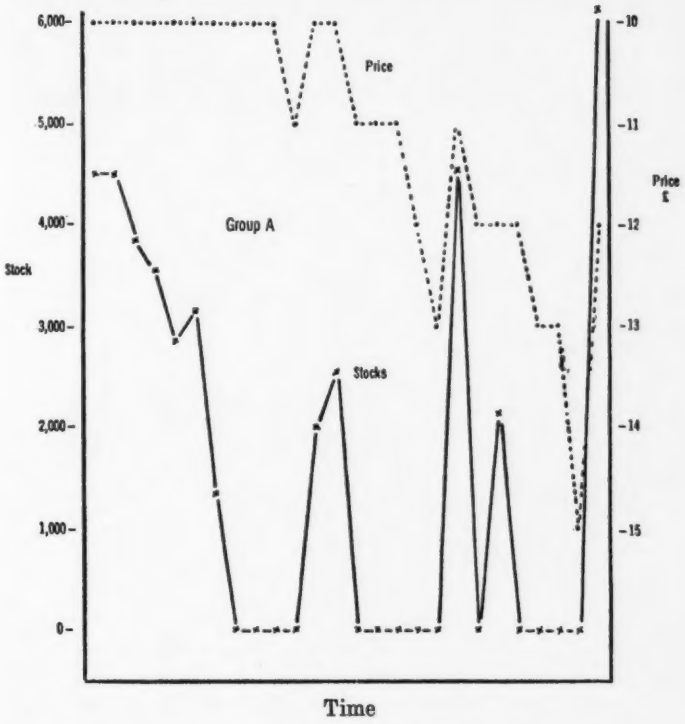

FIGURE 3

which evokes a response which has been developed and learned at some previous time as the appropriate response for the particular circumstances. In this case the acceptable decision rules, learned more rapidly by Group A than Group B, were as follows:

(1) Maintain output at the minimum cost level of output for the size of the plant.
(2) If the finished goods stock rises, reduce price.
(3) If the finished goods stock falls, raise price.

There are many other hypotheses which could be tested. For example, it could be hypothesised that if time lags were introduced into the price-sales relationship or if sales at a given price were adversely affected by frequent price changes, then the link between price and finished goods stocks would be much weaker. It could also be hypothesised that a production function characterised by high marginal costs and low fixed costs would give rise to a situation in which finished goods stocks were controlled by output changes rather than price changes. And so on.

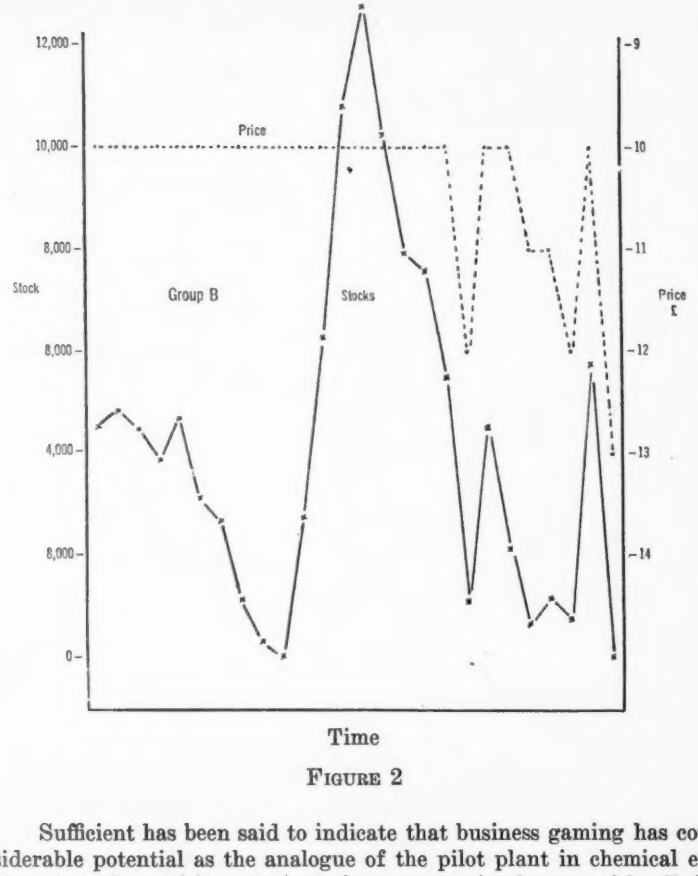

FIGURE 2

Sufficient has been said to indicate that business gaming has considerable potential as the analogue of the pilot plant in chemical engineering. Propositions derived from economic theory, with all its *ceteris paribus* assumptions, can be tested in a situation part of the way between the abstract world in which the propositions were bred and the full complexity of the real world. Further investigations are being undertaken into the duopolist's assumptions about his opponent's price behaviour and these will be reported in due course.

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EXCHANGE RESTRICTIONS AND THE I.M.F.

One of the purposes of the International Monetary Fund is "the elimination of foreign exchange restrictions which hamper the growth of world trade".[1] Also, "Subject to the provisions of Article VII, Section 3 (b) and Article XIV, Section 2, no member shall, without the approval of the Fund, impose restrictions on the making of payments and transfers for current international transactions".[2]

Article VII deals with scarce currencies in the Fund, and allows other members to impose restrictions against such a currency when it becomes scarce. This provision has never been used, and doubts have been expressed as to whether it is workable in practice.[3] It was never invoked against the dollar during the period of the Dollar Shortage, because dollars were technically scarce only outside the Fund.

On the other hand, most members of the Fund, with the notable exception of the United States, Canada and other American Account countries, have taken refuge in the transitional provisions of Article XIV, the introduction to which recalls that "the Fund is not intended to provide facilities for relief or reconstruction or to deal with international indebtedness arising out of the war". Section 2 of the Article provides that "In the post-war transitional period members may, notwithstanding the provisions of any other articles of this Agreement, maintain and adapt to changing circumstances (and, in the case of members whose territories have been occupied by the enemy, introduce where necessary) restrictions on payments and transfers for current international transactions. Members shall, however, have continuous regard in their foreign exchange policies to the purposes of the Fund; and, as soon as conditions permit, they shall take all possible measures to develop such commercial and financial arrangements with other members as will facilitate international payments and the maintenance of exchange stability. In particular, members shall withdraw restrictions maintained or imposed under this Section as soon as they are satisfied that they will be able, in the absence of such restrictions, to settle their balance of payments in a manner which will not unduly encumber their access to the resources of the Fund".

The transitional period was extended far beyond the time originally envisaged for the purposes of Article XIV, although reviews of the policy of countries which maintained restrictions were regularly undertaken by the Fund. During this time, however, the Fund had taken little active part in the solution of post-war monetary problems.[4] The groundwork for the gradual move towards convertibility in the 'fifties was laid by the European Recovery Programme and in the

[1] International Monetary Fund, Article I (iv).
[2] International Monetary Fund, Article VIII, Section 2 (a).
[3] Cf. the Radcliffe Committee, para. 690, H.M.S.O., Cmnd. 827, 1959.
[4] For a short account of the Fund's activity during this period see Brian Tew, The International Monetary Fund: Its Present Role and Future Prospects; *Essay in International Finance No. 36,* (International Finance Section, Department of Economics, Princeton University), March, 1961.

generosity of the Americans, but its final achievement was largely due to the Europeans themselves, especially to the multilateral payments made possible by the European Payments Union.[5] In December, 1958, the main European currencies were officially announced to be externally convertible, although *de facto* convertibility had been established much earlier.[6]

Of necessity, the move to convertibility had been accompanied by the virtual abolition of restrictions on trade and payments by the countries concerned, including the discriminatory restrictions for so long directed against dollar imports.

So far as the Fund was concerned, however, the currencies concerned had not reached the stage where they could be used for repayments to the Fund by borrowing countries.[7] Article XIX, Section (d) provides that "a member's holdings of convertible currencies means its holdings of the currencies of other members which are not availing themselves of the transitional arrangements under Article XIV, Section 2, together with its holding of the currencies of such non-members as the Fund may from time to time specify".[8]

The position of these countries was not clear so far as the re-imposition of restrictions was concerned. The Managing Director of the Fund, Dr. Per Jacobsson, referred to this at the Annual Meeting in 1959: "The scope for adapting restrictions under Article XIV has steadily diminished for a number of countries that have gradually reached a position where legally the reintroduction of restrictions (as distinct from the adaptation of existing restrictions) would require approval under Article VIII, even though the countries themselves remained formally under Article XIV."[9]

At the same meeting, the Governor for the United Kingdom indicated that the British view was that these provisions should be strictly interpreted. "Her Majesty's Government would not expect the Fund to approve any such restrictions under this Article unless there were good reasons to say that they could not have been avoided and

[5] See, for instance, Robert Triffin, *Europe and the Money Muddle,* (Yale University Press, 1957).

[6] *De facto* external convertibility of sterling was virtually established in February, 1955, when the U.K. Exchange Equalisation Account began to support the rate for transferable sterling in Zurich and New York; see the Radcliffe Report, *op. cit.*, para. 687.

[7] Although the Fund did provide them for borrowers if required.

[8] Although the Fund could, presumably, under Article XIX (g) make other currencies convertible: "The Fund, after consultation with a member which is availing itself of the transitional arrangements under Article XIV, Section 2, may deem holdings of the currency of that member which carry specified rights of conversion into another currency or into gold to be holdings of convertible currency for the purpose of the calculation of monetary reserves."

[9] Dr. Jacobsson said soon afterwards: "It is important that this legal position should be fully understood, for it means that the difference between the obligations of countries remaining under Article XIV, and of those assuming the full obligations of Article VIII, is much less sharp than, I think, is often believed"; Per Jacobsson, *Towards a Modern Monetary Standard,* The Stamp Memorial Lecture 1959, University of London, 19 November, 1959, (The Athlone Press, London, 1959), p. 16.

that their duration was expected to be temporary."[10] However, the Radcliffe Committee had observed that "before accepting the obligations of Article VIII the United Kingdom should seek to obtain the agreement of her fellow-members of the Fund that the Fund's approval for the use of discriminatory measures should not be withheld in conditions in which there is a persistent and substantial movement of gold and foreign exchange to a single country or group of countries."[11]

In June, 1960, the Executive Directors of the Fund made known their decisions regarding the assumption of the obligations of Article VII.[12] The guiding principle in ascertaining whether a measure is a restriction on payments and transfers for current international transactions under Article VIII is whether it involves a direct governmental limitation of the availability or use of exchange as such. The Directors considered that before members give notice that they are accepting the obligations of Article VIII, it would be desirable that, as far as possible, they eliminate measures which would require the approval of the Fund, and that they satisfy themselves that they are not likely to need recourse to such measures in the foreseeable future. If members, for balance of payments reasons, propose to maintain or introduce measures which require approval under Article VIII, the Fund will grant approval only where it is satisfied that the measures are necessary and that their use will be temporary while the member is seeking to eliminate the need for them.

On February 15, 1961, ten members of the Fund accepted the obligations of Article VIII; they were Belgium, France, Germany, Ireland, Italy, Luxembourg, the Netherlands, Peru, Sweden and the United Kingdom.[13] The Times had already suggested that such a move by the United Kingdom would have an added interest for holders of sterling, since acceptance of the obligations of Article VIII by the United Kingdom implies that sterling is a "reserve currency" in Fund terms, and can be used to repay obligations to the Fund.[14]

So far as Australia is concerned, her virtual abolition of restrictions in February, 1960, places her in the same position as other countries which have achieved their goal of moving from behind the protection of the transitional provisions. It appears there are now three distinct categories so far as restrictions are concerned:

(a) Those countries which are still availing themselves of Article XIV, and can adapt their restrictions under it (with the Fund continuing its review of such restrictions with a view to their elimination);

[10] Sir Roger Makins, in discussions on the Annual Report; reprinted in *Summary Proceedings*, Annual Meeting 1959, I.M.F., p. 81.

[11] The Radcliffe Report, *op. cit.*, para. 690.

[12] Published in *International Financial News Survey*, Vol. XII, no. 47, June 3, 1960.

[13] See *International Financial News Survey*, Vol. XIII, No. 6, February 17, 1961. Saudi Arabia accepted the obligations on March 22; see *International Financial News Survey*, Vol. XIII, No. 12, March 31, 1961.

[14] *The Times*, London, May 26, 1960, p. 21 (prior to talks between Governors of Commonwealth central banks, and the Bank of England).

(b) Those countries which have virtually abolished the restrictions they had retained under Article XIV, but which have not yet accepted the obligations of Article VIII;

(c) Those countries which have accepted the full convertibility provisions of Article VIII.

Australia is in category (b), and should she desire to impose any restrictions she must consult with the Fund, as she would under Article VIII. The Federal Treasurer has in fact confirmed that this is his view,[15] and the government has made it clear that it has no intention of reimposing any restrictions.[16]

Presumably, the Fund would approve of such restrictions only in an emergency. If the same test is applied to such requests as to those applied to members under Article VIII, "The Fund will grant approval only where it is satisfied that the measures are necessary and that their use will be temporary while the member is seeking to eliminate the need for them".[17] The implications are clear—members should apply more fundamental remedies to more fundamental problems; the Fund is ready to lend to members to tide them over temporary difficulties, but will do its utmost to avoid the imposition of restrictions.

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[15] In a letter to Mr. F. Crean, M.P., dated 29th May, 1961, in reply to questions asked by Mr. Crean in the House on 17th May. A copy of the letter has been sent to all members of both Houses. "Australia has now reached this position because, although we still maintain a system of exchange control we no longer restrict payments for current international transactions. The control is now maintained only to regulate transfers of capital and control of capital movements does not require Fund approval".

[16] "The Government has repeatedly stated and now reaffirms its intention not to reimpose restrictions on trade or current payments except in the event of a very serious balance of payments emergency necessitating a major shift in policy." Extract from Memorandum on Policies and Intentions of the Government of the Commonwealth of Australia attached to a letter from the Secretary to the Treasury to Dr. Per Jacobsson on 21st April, 1961.

[17] Quoted above, from the decision of the Executive Directors of the Fund, 3rd June, 1960.

MORE SPILT MILK

In his article "Crying Over Spilt Milk" (*Economic Record*, September 1961) Mr. F. H. Gruen misunderstands and misrepresents the position of the 'Sydney Group'[1].

1. He claims (p. 355) that we reject the "Downing-Karmel argument" as representing "too static a view".

This is not so. Two distinct points have here been welded together and need to be broken apart.

The one is the Downing-Karmel argument which (as Gruen puts it) is simply the welfare one that the real (opportunity) cost of

[1] As set out in N. T. Drane and H. R. Edwards (eds.), *The Australian Dairy Industry—An Economic Study* (Cheshire, 1961), hereafter referred to as *Study*.

resources used in dairying is the export price, and that it is therefore conducive to efficient use of national resources to ensure that marginal employment of resources be judged by this yardstick. In point of fact we do not, in the context to which Gruen refers, accept or reject this argument—merely refer to it, and then pass it by; because its validity depends on the fulfilment of the usual sorts of welfare assumptions, the principal one being that the optimum conditions be fulfilled everywhere else in the economy. The evident failure of this assumption in present conditions puts us in the domain of "second-best" arguments where the proposition is not necessarily true.[2]

Accordingly in this context and throughout the book, we adopt the more direct view, which so far as it can be put in a word, is simply as follows: while argument (or opinion) as to the "right" level of capacity and output—and, correspondingly, the degree of protection—for the industry is inconclusive; yet *the increase* in the level of protection ought to be brought to a stop since it has not achieved what has evidently been its real purpose, namely, to raise the average (real) return to producers.[3]

The other point—which is the point in respect of which the warning against taking "too static a view" is given—is this: that in a context where a given and unchanging measure of protection is afforded the industry to support a more or less constant total (industry) output, *but where the comparative circumstances of particular farms and regions are changing,* the one price—the equalised return—is efficient as a yardstick ("marginal revenue") governing the expansion of low-cost farms or the entry of low-cost new farms, and the contraction of high-cost farms or their exit from the industry.[4] The one-price system promotes this "restructuring", in that the low-cost producers have an adequate incentive to expand, the initial effect of which is to depress the equalised price and thereby increase the pressure for contraction (or exit) by high-cost farms.

We go on, nevertheless, to recommend abandonment of the one-price system on the ground *inter alia* that it has not been the case that a given measure of protection has been explicitly proposed and afforded the industry: rather the tendency in practice has been for the pressure generated by the expansion of low-cost farms to result in demands for more protection, which frequently have been

[2] See below, sec. (3) (iv).

[3] It is true, however, that intuitively we do judge the existing degree of protection as too high, and our proposals were designed (at a minimum) to achieve progressively the elimination of the Commonwealth subsidy (see *Study*, pp. 227, 315-16) and hence the measure of "protection" of the order of 25 per cent (in relation to export parity) which this represents.

[4] Just so, to quote from the *Study*, "in the theoretical model of perfect competition the marginal revenue for expansion or contraction of firms is the market price; not the additional revenue from a net increase in the industry output, which would frequently be negative"—though positive, equal to the export price, in the butter industry case, as we have ourselves affirmed.

granted[5]—with the result that contraction is lessened, and the industry expands, at much the same average return to producers as before, despite the increased measure of protection.

2. Gruen imputes to us in one of his summary points (p. 356) the view that low incomes as such justify contracting the industry. He is, of course, correct in his assertion that this is not necessarily so. We certainly did not argue otherwise. As already indicated, what we made of the fact, and the further fact that the low incomes seem to have persisted for a long period despite a steady rise in protection, was an argument for doing something about low incomes. We advocated cutting through the obstacles which have in the past prevented direct production controls in the industry, and proposed (among other measures) a "quota scheme". The object of the scheme was to raise incomes by making the most of what protection is afforded the industry, while reproducing as far as possible the efficient "restructuring" mechanism of the equalisation arrangements.

3. In respect of the quota scheme Gruen would suggest that it is unacceptable because the proposal for the revision of quotas at regular intervals (two or three years) "introduces a strong incentive to keep up or expand production" (p. 362).

We were, of course, well aware of this traditional objection to quota revisions (as is evident from the passage quoted by Gruen himself in the paragraph here referred to), and it is irritating in the extreme that this charge should be levelled against us without considering our proposals in detail and as a whole. A number of points need to be made:

(i) It is common ground that quotas are to be fixed in terms of actual units of output at (say) 60 per cent of base-period production. A feature of our proposals is that no quota should be reduced—unless a farmer's production (on the average of the past two to three years) should actually fall below the quota level itself. The farmer does not therefore have to "keep up" his production in order *to maintain* his quota: he may shed up to 40 per cent of base-period production, if with the two-price system of payment this is seen to have been unprofitable, without loss of quota.

The only incentive not to do this is the relative "penalty" of receiving an unchanged quota when other producers, by expanding production beyond base-period levels, are qualifying for an increased quota. We judge this "incentive" (or reduced disincentive) to be small because:

(ii) The magnitude of the increase in quotas in the case of farmers who expand production beyond base-period level will be both uncertain and, at any one revision, small. The scope for increasing quotas will depend mainly—solely, if quotas are marketable—on

[5] The expectation of this is one factor—not mentioned by Gruen—which we suggest as a possible cause of the reluctance of marginal producers to leave the industry.

such expansion as may occur in home market sales. Home sales have been virtually stationary in recent years, but we look to vigorous sales promoton to arrest the rate of decline in consumption per head, and thus for aggregate sales to expand somewhat with increasing population. However to envisage an increase of 2 per cent between revision periods may well be optimistic, and with (say) one-third of farmers qualifying for a revised quota this would involve an increase in the quoaas of such farmers, on the average, of only 6 per cent.

(iii) The incentive effect of this, such as it may be, will of course depend on the price received for quota production (say, the Australian market price) and that for non-quota production (say, the export price). The lower the export price the greater the value to the farmer of a given increase in quota. But, on the other hand, the lower this price the less profitable (or more unprofitable) is non-quota production, and in particular additional non-quota production to qualify for a quota increase. The effect on profits of the decision with respect to non-quota production in each of the two to three years to quota revision, is immediate and significant. Our view is, then, that the uncertain and distant prospect of some small increase in quota is unlikely to have much effect, let alone a "strong" effect, on the making of this decision in the majority of cases—granted, of course, the key condition that the farmer incurs no penalty by way of a reduction in his present quota for a contraction of production below base-period level ((i) above).

(iv) Indeed we are inclined to the view that there would be too little incentive;—that a two-price quota scheme with the lower price equal to the actual export return is undesirable because it would prove to be too contractionary, in particular offering an excessive disincentive to the low-lost producer.

This judgment is conditioned by two factors. First, in our opinion Gruen (and others), on the basis of what he refers to as the Downing-Karmel argument, exaggerates the extent to which the industry is at present over-expanded.[6] Accordingly, for Gruen, the more a scheme

[6] We can readily concede that with the tendency since about 1956-57 towards predominantly low export prices, the *marginal* investment of net additional resources in butter production ought to be undertaken with reference to the export return—modified in some degree in the light of protection afforded other industries (failure of optimum conditions elsewhere). The case for the export return as yardstick, however, is even more equivocal in respect of the proposal for a finite *non-marginal* contraction of the industry, which is what is at issue here. This raises in particular the question of the profitability of alternative avenues of employment in the event of a large transfer of resources (e.g. what might happen to the price of vealers?) which we have discussed elsewhere together with some of the social and practical difficulties involved (*Economic Record*, March, 1961.) Another difficulty is the great variability of the proposed yardstick, which is in fact the very artificial price of the 12 per cent of world butter production traded on the exploitative London market. (Though largely irrelevant to a calculation of where our own advantage lies, it is salutary to reflect *apropos* the charge that the Australian industry is "inefficient", that the 85 per cent of world butter output which is consumed domestically in the various countries, is produced and sold at a level of prices on the average as high as, or higher than, the Australian price.)

induces (voluntary) contraction, the more desirable it is—even if this is to be achieved by checking the expansion of low-cost producers while retaining high-cost producers in the industry (producing only quota outputs)! As against this, we look for only a moderate contraction, but accordingly deem it all the more important that the low-cost producer be encouraged and the high-cost producer discouraged.

The emphasis we put on this "restructuring" is reinforced by the second factor referred to. This is the evident tendency for productivity to increase relatively slowly in the industry, with a corresponding tendency for real costs to rise. This is an important aspect of our general thesis[7] to which Gruen does not refer; nor, on our reading of its Report, does the Dairy Committee of Inquiry show any awareness of it.[8] It represents a permanent contractionary force, in the absence of increasing protection, whatever the arrangements in the industry: and it is as an offset to this upward pressure on costs that we are at such pains to promote the continuing transfer of production from the less, to the more, efficient producers.

Accordingly we proposed that the administering authority should set the lower price ("value B", for non-quota production) rather higher than the export return[9], and the higher price ("value A", for quota production), correspondingly, rather lower than the home-market price[9]. The latter in reducing the profitability of quota sales puts greater pressure on the high-cost producer to forfeit—or to sell, if that is provided for—his quota and so quit the industry. In the case of the low-cost producer on the other hand, although the value to him of an increase in quota is reduced, the current profitability of non-quota production is enhanced by the higher B value, and this, as suggested above, is what really counts.

(v) While we deny the "criticism" that the revision of quotas in the manner proposed above is excessively expansionary, we do recognise (as Gruen notes) that it may involve administrative difficulties. It might then be argued, inasmuch as we have ourselves emphasized that the increase in quotas at any particular revision will necessarily be small, that the game would not be worth the candle. We believe, however, that the cumulative effect over a long period would be significant, and it is desirable to achieve it. Nevertheless if the administrative problems were widely held to constitute a decisive

[7] *Study*, p. 20 and *passim*.

[8] Rather, the Committee seems to attach great importance to its recommendations for what appears to us to amount to a once-over reduction in costs. Thus it wants to maintain or even expand current output levels (*Report*, p. 115) whilst still reducing protection to the extent of the subsidy (p. 93), envisaging a reduction in costs through improvements in farm efficiency (pp. 76-7, 90), greater farm investment, and a rehabilitation programme as the means of reconciling these apparently conflicting objectives. Moreover the plan is to have a limited currency (p. 116) at the expiry of which the industry's "economy will be unquestioned" (p. 105). The failure to recognise the continuing nature of the problem seriously mars, in our opinion, what is otherwise an excellent report.

[9] While the subsidy is being paid, each of these should read 'plus subsidy per unit of all production'.

objection, it would be necessary to fall back, with Gruen, on the free marketing of quotas solely; this, *granted an appropriate B value,* would promote some measure of "restructuring" in the industry. With quotas thus fixed once and for all, any expansion in home sales would yield a surplus in the accounts, which would enable a corresponding reduction in the Commonwealth subsidy.

H. R. Edwards
N. T. Drane

University of Sydney.

NEWS AND NOTES

The thirty-sixth congress of A.N.Z.A.A.S. (marking the seventy-fifth anniversary of the Association) will be held in Sydney in 1962, on 20-24 August. The secretary of Section G (Economics, Statistics and Social Science) is Dr. H. R. Edwards, Department of Economics, University of Sydney, who would welcome offers of papers to be presented at the congress.

Professor J. H. Williams, formerly Professor of Economics at the University of Ghana, has been appointed to the Chair of Economics at the University of Otago. Mr. Wilfrid Candler, formerly Senior Lecturer in Statistics at the University of New England, has been appointed to the Chair of Agricultural Economics at Massey Agricultural College. Dr. H. B. Low, formerly Senior Lecturer in Agricultural Economics at Massey Agricultural College, has taken up a new appointment as Chief Executive of the Monetary and Economic Council recently set up by the Government of New Zealand to advise on current economic problems. The first Chairman of this committee is Professor F. W. Holmes of the Victoria University of Wellington. Dr. H. Bernardelli, formerly Reader in Economics at the University of Otago, has been appointed to an Associate-Professorship of Economics at the University of Auckland. Dr. G. P. Braae, Senior Lecturer in Economics at the University of Otago, is taking up the same appointment at the University of Auckland.

BRANCH SECRETARIES

New South Wales: R. R. Clark, C/- The Mutual Life & Citizens' Assurance Co. Ltd., Box 1598, G.P.O., Sydney, N.S.W.

Victoria: Mr. G. Bills, Department of Economics, University of Melbourne, Parkville, N.2, Victoria.

Queensland: Dr. Helen Hughes, Department of Economics, University of Queensland, St. Lucia, S.W.6, Queensland.

South Australia: Mr. D. H. Whitehead, Department of Economics, The University, Box 498 D, G.P.O., Adelaide, S.A.

Western Australia: Mr. G. A. Bartlett, C/- Administration, University of W.A., Nedlands, Western Australia.

Tasmania: Mr. D. E. Kirby, Box 665E, G.P.O., Hobart, Tasmania.

Canberra: Mr. K. Sloane, Department of Economics, School of General Studies, Australian National University, Canberra, A.C.T.

Wellington: Mr. P. S. Stannard, C/- Bowden, Bass & Cox, Public Accountants, P.O. Box 986, Wellington, New Zealand.

Auckland: Mr. V. Argy, University of Auckland, P.O. Box 2175, Auckland, New Zealand.

Christchurch: Mr. H. A. Brokking, 19 Heywood Terrace, Christchurch, New Zealand.

The Adventure of Growth. By D. B. COPLAND. (Cheshire, Melbourne, 1960.) Pp. xii + 148. 30/- Aust.

This is a collection of papers written by Sir Douglas Copland between the years 1953 and 1959 during his important work as Australia's High Commissioner to Canada and delegate to the United Nations (in which he served as Chairman of the General Assembly's Economic Committee and President of the Economic and Social Council) and, more recently, as first Principal of the Australian Administrative Staff College. Sub-titled "Essays on the Australian Economy and Its International Setting", the volume ranges in scope from papers on Australian economic development (with special reference to such subjects as immigration, education, the role of the public sector and problems of the administrator) to essays on international affairs (with emphasis on the problems of under-developed countries and their relationship to the western economy in general and the British Commonwealth in particular). Despite the title of the book, not all the essays are directly concerned with economic growth; one ("Men Come to Wisdom Slowly") is a briliantly written exposé of American politics in the McCarthy era.

Sir Douglas is always stimulating and these papers command respect as much for the author's liberal views concerning the responsibilities of Australia and the West towards the under-developed section of the world as for his emphasis on the need for positive action by government in respect of development and social services in the domestic economy. He sees the key factors determining the rate of development in Australia as "adequate provision for the education, health and housing of its people; the supply of expanding services of transport, water and irrigation, fuel and power; the intrepid pursuit of research into the indigenous problems affecting the course of development; the assurance that the fruits of progress as well as the costs will be equitably shared; and the guarantee that private enterprise may flourish in a favourable framework". Professor Copland has thus anticipated many of the ideas which Galbraith expressed in "The Affluent Society"; in these papers he has repeatedly emphasized the need for increased public investment, and has castigated Western countries for the waste involved in their policies of "calculated obsolescence" and for their neglect of education at a time when such a large proportion of their resources is devoted to advertising, radio and television.

As Australia's elder economic statesman, Sir Douglas is somewhat impatient of modern methods of economic analysis; he complains that economists exhibit "too great a tendency to seek technical perfection in theoretical analysis, and to sacrifice the end for the means". In the essays on Australian economic growth he is therefore

concerned mainly with ends; he discusses the policy objectives themselves rather than the problems that arise in implementation of policy. It is clear from the book that his advocacy of a policy of rapid growth derives only partly from economic motives such as the growth in Australian (and world) population and the possibility of deriving increasing returns from Australia's thinly spread stock of capital; it is partly a response to his own well-developed sense of adventure and to what he calls the shortening of the time-span of change, resulting in ever-widening frontiers in agriculture and industry. In these essays, Sir Douglas does not discuss at length the conflict between economic growth and stability, but the events of the past few months have no doubt won many converts to his strongly-held belief that preoccupation with price stability must sooner or later make it impossible for Australia to maintain a programme of vigorous economic expansion.

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University of Adelaide.

The Diplomacy of Economic Development. By EUGENE R. BLACK. (Harvard University Press, 1960.) Pp. x + 74. 33/- Aust.

Patterns of Trade and Development. Wicksell Lectures for 1959. By RAGNAR NURKSE (Basil Blackwell, Oxford, 1961.) Pp. 62. 6/- stg.

In his Clayton Lectures for 1959-1960, Eugene Black, President of the International Bank for Reconstruction and Development, offers largely from his own experience some well worthwhile comments and proposals affecting relations between advanced and underdeveloped economies. I choose two only for this short review.

Black has a good deal to say about the hopes of the West in relation to economic development in underdeveloped countries and warns that there is no "certain and established relationship between economic progress and the values of freedom and tolerance. . . ." He argues that failure will be dangerous, but success in stimulating economic development may not achieve any particular pattern of freedom as conceived by Western Governments proffering aid. The argument opens up a major field of enquiry and speculation for students in international relations.

Black's second contribution is to stress the task of "illuminating the choices" confronting those responsible for economic development. The phrase is a good one. In underdeveloped areas the choices are almost always difficult and often cruel—since so much is wanted in a short time and so few resources are disposable in an effective sense in that time.

The author pleads for a special class of advisers, development diplomats, whose task is to elucidate the choices open to those responsible for decisions and to illuminate them by showing the economic consequences of this and that decision. None will quarrel with

the need for this service in any economy. The case for an enlargement of the growing international service in this field of advisory administration is very strong. The Bank itself has also shown it can contribute training and experience in building up effective services.

Black's lectures are useful and stimulating reading. For the professional economist they are less rewarding than the Wicksell Lectures delivered by Ragnar Nurkse in 1959. It is beyond the compass of this review to do them justice: my own reaction is simply strongly to recommend them as required reading for courses which touch on the relations between trade and development in underdeveloped areas.

The two lectures and a theoretical appendix explain the differences between the trade mechanism of the 19th century and now: a century ago trade was a more effective "engine of growth". Export proceeds from underdeveloped areas sustained and justified imports, together with migration, and capital inflows on a large scale. To-day the underdeveloped areas are poorer, migration to them does not occur (and would mostly be harmful since population growth is too great anyhow), and imports, although quite high, are sustained less by direct private risk investment and more by international loans and aid programmes.

Moreover, the terms of trade to-day are made unfavourable for the exports of underdeveloped areas (and some others, too!) by rigid controls of imports of agricultural products, minerals and low cost manufactures. The terms of trade do not function as satisfactory reflectors of comparative advantage, unless account is taken of artificial barriers to trade. The mechanism which favoured the transfer of capital and technological skills for the development of supplies to meet the needs of European industries in the 19th century has now become far less important. If full account of these factors is taken there must be more emphasis on domestic markets for import-replacing production. [The protection afforded domestic producers of relatively crude manufactured goods (e.g. textiles) in the industrialised countries is even more marked than that which applies to industrial raw materials.] Least comparative disadvantage becomes important in the planning of capital investment in underdeveloped areas. In explaining the necessity to industrialise in terms of the home market and not merely in terms of possible export markets, Nurkse does not fail to develop his case for balanced economic development, especially as between agriculture and industry.

The lectures are not comfortable reading for those who abhor protection of domestic industry and who consider freer trade is both a proper and an internationally practicable instrument of economic growth in underdeveloped areas. At times the author himself seemed uncomfortable. Yet, to his credit, he has taken as facts of life the difficulty many countries now face in developing growth through exports of primary products or through exports of manufactured consumer goods.

To this reviewer, a newcomer to the field of studies in economic development, these lectures have been a most rewarding introduction—far more rewarding than many more ambitious efforts. He joins in the widespread sense of loss that untimely death has robbed us of further contributions from their author.

J. G. CRAWFORD

Australian National University.

Agricultural Production Functions. By EARL O. HEADY and JOHN L. DILLON. (Iowa State University Press, Ames, 1961.) Pp. viii + 667. $6.95.

It is believed by many who teach agricultural economics that Heady's *Economics of Agricultural Production and Resource Use* does not present the analysis of the economies of agricultural production sufficiently formally for the serious student. This book would appear to be designed partly to fulfil that need. As a text book it can well be used in conjunction with Heady's book. It requires relatively little mathematical sophistication to follow most of the argument but at the same time the significant developments in the field have been described and analysed. Thus it will serve as a valuable reference for research workers as well as an advanced text book.

The book divides into two fairly distinct parts. Especially from the Australian point of view the first seven chapters are the most interesting. They are concerned with general and methodological problems. Within this section a detailed critical description of methods of data collection and analysis is given. Rather than attempting to include every possible form of production function the authors have wisely decided to use the main forms as examples in a discussion on choice of form under different conditions. While much of this material is not new in the sense of involving theoretical advances the consideration of all of these features of production function analysis in a single volume results in new light being shed, particularly on the relationships between different parts of the analysis involved.

It is easier to be critical of the section of the book which considers the applications and usefulness of production function research. The authors are probably less critical than many of their colleagues of the information provided from agricultural experiments. However it appears more debatable than they would admit, whether advice based on production functions could have been, or ever will be, in extension work, as valuable as the established method of direct inference from experimental results.

The last ten chapters report the results of specific estimates of production functions, mainly carried out at Iowa. The chapters relating to milk and beef production and fertilizer use will be of most interest here. A final chapter compares results of production function estimates in different countries.

G. M. NEUTZE

Australian National University.

The Strategy of Conflict. By T. C. SCHELLING. (Harvard University Press, Cambridge, 1960.) Pp. 309. 68/9 Aust.

There is a sense in which every major American study, by one of the "new intellectuals" of Harvard University or the Rand Corporation, is about the same thing, America's epic rivalry with the Soviet Union. Professor Schelling's contribution to the theory of games is written quite explicitly as a study in the current cold war. It is a study in the theory of the deterrent.

Professor Schelling begins with a generalised account of bargaining, which studies "situations involving commitments, threats, promises and communication problems". The essay on bargaining, brief and limited though its illustrations are, brings out the possibility of at least five alternative situations facing two players of a game (one assumption being that the "values" of the game are obvious and known to both players). In the first case, who moves first (and commits himself to a strategy) determines the outcome, in the second there has to be commitment to a conditional play by one player to avert defeat, in the third, only commitment to a promise by both sides will win the mutually best position (and there is an incentive to cheat) which means that at least one party must be able to commit himself to a strategy (or both must be able to make enforceable promises); finally, two situations which make extortionate threats possible are analysed, and many more situations are possible.

The importance of assessing the situation becomes rather clear. But Professor Schelling is hunting other quarry. He is concerned with the mixed-motive game with a known pay-off. He analyses the situation wherein a player tries to arrange things so that his own behaviour is constrained deliberately, and an effort is made to convey the truth of this situation to the opponent. If the Russians know that in certain circumstances the American *must* drop so many hydrogen bombs on their country, then presumably (rationality being assumed) they will avoid those circumstances, and the trick is for the Americans to convince the Russians that if the circumstances arise they, the Americans, cannot change their minds.

Men have been playing the kinds of game that Professor Schelling analyses ever since the institutions of hostage exchange (or kidnapping) were invented. He has illustrations of play in any number of human conflict situations. He points out that the H-bomb has virtually resulted in Russia and America exchanging the majority of their populations as hostages. The "balance of terror" is a "massive and modern version of an ancient institution; the exchange of hostages".

So long as sovereign states observe no higher law this may be the only means of stability. He points out the dangers, on his theories, of complete arms inspection, which might reveal temporary nonalertness on one side and so upset equilibrium. All that is needed is sufficient inspection to assure both sides that surprise attack can be

ruled out. At this and other points his arguments directly contribute to policy.

Most of the book has to do with the cold war, and little of it is overtly concerned with economics. The argument is mainly applied to international relations. Nevertheless, Professor Schelling's "commitment theory", if it may be so called, and his definition and analysis of "threats", together with his discussion of the communication problems of commitments and threats, have undoubted applicability to many economic situations. "The distinctive character of a threat", Schelling suggests, "is that one asserts that he will do, in a contingency, what he would manifestly prefer not to do if the contingency occurred, the contingency being governed by the second party's behaviour". The theory must be relevant to the relations between banks and their customers, mortgagors and mortgagees, parties to auction sales, retail and wholesale negotiations, landlord and tenant bargains, even to relations between customers and retail sales clerks. The empirical work has yet to be done to study the norms that are adopted, and the means of comunication that have been developed, to provide determinate solutions in some of the typical cases that must daily occur. This very readable book successfully explores a new part of the theory of games, and gives hope that we understand bargaining processes more thoroughly as soon as data on those processes is available.

IAN BOWEN

University of Western Australia.

Factory Wage Structures and National Agreements. By D. J. ROBERTSON. (Cambridge University Press, London, 1960.) Pp. xi + 260. 40/- stg.

This is a systematic analysis of the gap between nationally determined wage rates and wage earnings, commonly referred to as the "wage drift". It is based on the engineering and shipbuilding industries in the U.K. and includes case studies of two factories and a shipyard.

Actual wage rates at the factory level differ only slightly from nationally negotiated rates. The main explanation for the divergence between earnings and negotiated rates appears to be the wide prevalence of payment-by-results and overtime which, between them, amount to as much as half of the total payments. "In this way the factories appear to be adhering, more or less, to national agreement rates, while at the same time actually paying substantially more". (p. 90). These methods of payment tend also to distort earnings differentials for skill, and to produce haphazard differences between skilled, semi-skilled and unskilled workers with overlapping ranges of payments between them.

Mr. Robertson pursues in some detail payment-by-result as a method of payment—its objectives, the conditions necessary for its successful operation, and the conflicts and compromises of practice. He concludes that "since payment-by-results bonuses are now fre-

quently much more than marginal additions for above average performance, and are offered as a recruitment inducement, large parts of such bonuses must be regarded as alternatives or as additions to rate payments". (p. 195).

The investigation into overtime practices reveals the need to distinguish between two types—one undertaken occasionally to meet a special emergency situation; and the other, a post-war phenomenon, of persistent overtime working organized as a regular feature of employment. The basis of the latter is an inducement to recruitment, the result of a persistent tight labour market.

What is the relevance of all this for wage policy? Mr. Robertson argues that the major source of trouble for wage policy arises from the determination of standard rates at the national level on the basis of political and institutional considerations leaving earnings to adjust themselves more closely to the economic forces surrounding the firm. The divorce of the determination of standard rates from earnings has several undesirable consequences.

First, increases in standard rates tend to be passed on to earnings, lifting the general level of earnings even when such earnings are well above the raised standard rates. This leads to cost inflation.

Second, the concentration of wage determination at the national level tends to leave little constructive work for trade union officials at the branch levels. This leads to the atrophy of the branch and increases the danger of disassociation between the union and its members. The individual employer, on the other hand, is also restricted in his dealings with the union because of the authority of the employers' association in wage negotiations.

Third, the need for employers to disguise the payment of amounts in excess of negotiated rates tends to force the spread of payment-by-results and overtime to an unjustifiable extent, leaving to a haphazard structure of earnings and discouragement of labour mobility.

The way out of these difficulties, according to Mr. Robertson, is to confine national negotiations on as wide an industrial front as possible, to the determination of *minimum* rather than standard rates. "Changes in such minimum wages should not be regarded as automatically affecting the payment of those above the minimum" (p. 205). On the other hand, factory rates should be fixed by bargaining between branch officials and individual employers.

Granted that the increase in local bargaining will produce a desirable revival in the union branch, is it not unduly optimistic to expect that the determination of national minimum rates will not have much the same consequences on the level and structure of earnings as nationally determined standard rates? Above all, Mr. Robertson admits that standard rates usually tend to become minimum rates; and it would be surprising if those concerned with fixing standard rates were not aware of this fact, and did not adjust their tactics in negotiations accordingly. In any case, the experience of minimum rate fixing by wage tribunals in Australia does not provide much support for Mr. Robertson's expectations.

It is also not clear from the analysis why, if factory earnings are dominated by economic forces, standard rates should automatically be passed on to earnings even in the absence of excess demand. It does not follow, as he appears to argue (p. 196), that "a general wage increase in a fully employed economy can create increased demand and permit prices to rise" if the general wage increase, whether standard or minimum, is not transmitted first into earnings. It is the process of transmission which is the critical factor and which is not convincingly explained in the book. If economic forces are so significant at the factory level, why is it necessary to suppose that, without excess demand, adjustments in earnings are always in an upward direction?

Finally, even if we may expect a more rational earnings and rates structure to result from local bargaining, and this is far from certain, it is difficult to believe that, under full employment, pattern setting forces will not operate markedly or that coercive comparisons will not be used by unions at the local level to extract wage increases. Perhaps it is a matter of degree. And while one would agree that "wage stability is only possible when wages are settled more closely in harmony with the economic pressure bearing upon employers" (p. 210) it is questionable whether the methods of wage settlement advocated by Mr. Robertson would contribute to this end.

These criticisms should not detract from the general excellence of the book which must be regarded as basic reading for anybody interested in labour economics.

J. E. ISAAC

University of Melbourne.

Small City Job Markets: The Labor Market Behaviour of Firms and Workers. By R. C. WILCOCK and I. SOBEL. (Institute of Labor and Industrial Relations, University of Illinois, Urbana, 1958.) Pp. 170. $3.50.

One of the big difficulties in measuring the labour supply is the shifting fringe of workers into and out of the work force. How large is this fringe? Does it vary from one labour market to another? Who are the people making up this fringe? What factors determine their entry into and their withdrawal from the work force? These questions have important implications for such matters as the potential rate of industrial expansion, the location of such expansion and its impact on the wage level.

This book attempts to throw light on these and other related questions in the narrow context of a number of Mid-western country towns. It consists of two studies which although slightly different in survey methods have common points of interest. One is based on Kankakee with a population of just under 100,000 and the other on four towns each with a population of less than 50,000.

These investigations suggest that the work force in non-metropolitan towns is, in the short period, flexible within wide limits and

that this flexibility is determined not so much by the level of wages, as by the number and nature of employment opportunities. A substantial expansion in demand seems to produce the requisite supply of labour; a contraction in demand leads to a withdrawal of labour from the work force instead of unemployment. As the authors point out, there is a similarity in this respect between underdeveloped countries and these country towns which, in the industrial sense, may, of course, be regarded as underdeveloped.

On the supply side, which is the focus of these investigations, the flow into and out of the work force is due to a class of workers which the authors have termed secondary workers: "those who are in the labour force from time to time, but who are not continuously attached to it". These are distinguished from primary workers who are in the work force through the normal years of working life. It is the secondary work force which acts as an adjusting device, mitigating both the labour shortage in a period of industrial expansion and unemployment in a period of contraction.

There is a detailed analysis of the characteristic features of primary and secondary workers. The latter appear to consist predominantly of the younger female workers, and to a lesser extent of the young (under 25) male workers, mostly students. While primary workers are mostly breadwinners, for secondary workers employment provides an additional source of family income. There is some evidence also, though of a more tenuous character than the authors would have us believe, that secondary workers tend to move into the primary class after being accustomed for some time to a higher level of family income.

The need for further studies of this kind encompassing a more varied range of areas would add usefully to our knowledge of labour markets. Moreover, as the authors suggest, the distinction between primary and secondary workers could well be incorporated in Census Schedules.

Without detracting from the general merit and usefulness of this book, one criticism may be offered. Reference is made in various parts of the book to the controversy between the "classical" emphasis on wage differentials in the mobility of labour and those who would argue that mobility is based on non-economic considerations. These references are unnecessarily confusing. The controversy surely relates to the allocation of a given labour supply among a given number of alternative uses, where as this book appears mainly to be concerned with the "aggregative" problem of mobility into and out of the work force. Although these two sets of problems are not unrelated, and indeed the distinction between primary and secondary workers could go some way to reconciling certain differences between them, it is necessary to distinguish more clearly than the authors have tried to do between what are essentially different problems.

J. E. Isaac

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BOOKS RECEIVED*

A.—AUSTRALIAN AND NEW ZEALAND PUBLICATIONS

BUTLIN, S. J. *Australia and New Zealand Bank: The Bank of Australasia and the Union Bank of Australia Limited, 1828-1951.* (Longmans Green & Co. Ltd., Melbourne, 1961.) Pp. 459. 45/- Aust.

GINSWICK, J. *Select Bibliography of Pamphlets on Australian Economic and Social History, 1830-1895.* (Law Book Co., Sydney, 1961.) Pp. 24. 7/6 Aust.

A useful guide to some 400 pamphlets which are a representative sample of Australian 18th and 19th century pamphlets held by the Mitchell Library in Sydney. The date of publication and Mitchell catalogue number are included, so that the list will not only provide scholars with a valuable bibliography, but also save them time and trouble in the Mitchell Library.

HOLMES, A. S. *Flow-of-Funds, Australia, 1953-54 to 1957-58.* (Reserve Bank of of Australia Staff Paper, 1961.) Pp. 135. Price not stated.

KIDDLE, M. *Men of Yesterday: A Social History of the Western District of Victoria 1843-1890.* (Melbourne University Press, 1961.) Pp. 573. 63/- Aust.

MALLYON, C. A. *The Principles and Practice of Farm Management Accounting.* (The Law Book Co. Pty. Ltd., Melbourne, 1961.) Pp. 363. 63/- Aust.

B.—OTHER PUBLICATIONS

ANDREWS, P. W. S., and FRIDAY, F. A. *Fair Trade: Resale Price Maintenance Re-examined.* (Macmillan, London, 1960.) Pp. 84. 10/- Aust.

This pamphlet supporting resale price maintenance consists of two distinct parts. The first part is a crisply written, hard-hitting attack by Friday on the criticisms of resale price maintenance, in which he uses a variety of statistical material to controvert the opinions of B. S. Yamey in particular. The second part, by Andrews, is an extension of his "Manufacturing Industry" analysis to retail trade to show the broad function of resale price maintenance and the communal benefits therefrom.

BADRE, A. A. and SIKSEK, S. G. *Manpower and Oil in Arab Countries.* (American University of Beirut, 1959.) Pp. 270. Price not stated.

The position of the personnel manager in a foreign oil company in the Arab countries has been no sinecure. The labour problems which he has had to face and how they have been dealt with is the theme of this book. The problems are discussed against the background of rising Arab nationalism.

BAUMOL, W. J. *Economic Theory and Operations Analysis.* (Prentice-Hall Inc., New Jersey, 1961.) Pp. 438. Price not stated.

BENSUSAN-BUTT, *D. M. On Economic Growth.* (Oxford University Press, 1960.) Pp. 214. 39/3 Aust.

BERGER, J. and WIENBERG, D. *Probleme und Steigerungsmoglichkeiten der Spanischen Ausfuhr von Gemuse, Obst, Sudfruchten und Fruhkartoffeln.* (Institut fur Weltwirschaft an der Universitat, Kiel, 1961.) Pp. 120. Price not stated.

BLACK, *E. R. The Diplomacy of Economic Development.* (Harvard University Press, 1960.) Pp. 74. 33/- Aust.

BRAND, *W. Requirements and Resources of Scientific and Technical Personnel in Ten Asian Countries.* (U.N.E.S.C.O., Paris, 1961.) Pp. 31. Price not stated.

Professor Brand stresses the importance of scientific and technical manpower for economic development; describes and evaluates the methods used in ten Asian countries for assessing the availability of the required personnel; and recommends that all underdeveloped countries should set up an organization for assembling the facts available and estimating future requirements.

BRY, G. *The Average Workweek as an Economic Indicator.* (Occasional Paper 69. National Bureau of Economic Research, New York, 1959.) Pp. 115. $2.00.

BUSSCHAU, W. J. *Gold and International Liquidity.* (The South African Institute of International Affairs, Johannesburg, 1961.) Pp. 102. R1.00 (10/-).

This book offers economic arguments for revaluing gold which, the author believes, is the only solution for international illiquidity. Other solutions simply envisage the enlargement of international debt (as well as of

* Acknowledgment of publications does not guarantee review.

domestic bank credit) and would succeed in only temporarily redistributing illiquidity. Gold revaluation would give to national reserves a greater "potential command" over currencies of others, without a corresponding increase in external debt. The cause of inflation—the source of international illiquidity—has been the more rapid expansion of credit than output.

CHICAGO BOARD OF TRADE. *Futures Trading Seminar—History and Development, Vol. I.* (Mimir Publishers, Inc., Wisconsin, 1960.) Pp. 283. Price not stated.

CLARK, C. *The Economics of Irrigation in Dry Climates.* (Agricultural Economics Research Institute, Oxford, 1960.) Pp. 31. 5s. stg.

In the light of a recent development in the knowledge of water used by plants this booklet analyses the profitability of irrigation. Costs and returns data from many countries have been assembled. Higher valued crops (per acre) generally give high returns. The U.S.A. shows the highest returns from irrigation and a survey of potential reveals scope for development in the U.S.A., India, the Middle East and Central Asia.

CONAN, A. R. *The Rationale of the Sterling Area.* (Macmillan & Co., London, 1961.) Pp. 133. 34/9 Aust.

ECWARDS, R. S. and TOWNSEND, H. (Eds.) *Studies in Business Organisation.* (Macmillan, London, 1961.) Pp. 160. 41/6 Aust.

Three years ago the editors published a notable text, *Business Enterprise,* and now supplement it with a series of studies prepared for their seminar at at the L.S.E. Eight of the studies are accounts by chairmen, deputy chairmen or managing directors of their own businesses; Forte's the caterers, the Dowty Group which has branched from aircraft equipment to hydraulics and "nucleonics", the Mobil Oil Company, Elliott Automation Ltd., Guest Keen and Nettlefolds bolt, nut and screw business, Vauxhall Motors, the P. and O. Company, and Boots Pure Drug Company. Sir David Webster contributes a chapter on the economics of the Royal Opera House and Sir John Simpson one on H.M. Stationery Office. Most of these are interesting contributions to economic history, and all throw light upon the complexities of business management.

ELLIS, H. S. and WALLICH, H. E. (Eds.). *Economic Development for Latin America.* (Macmillan, London, 1961.) Pp. 469. 64/9 Aust.

A valuable addition to the group of symposia published by the International Economic Association. This is an edited record of an international conference at Rio de Janeiro in August 1957. Papers by Rosenstein-Rodan, Lebenstein, Haberger, Ragnar Nurkse, T. W. Schultz and others. Emphasis is on *theory* of economic development and its relevance to Latin America, rather than on operational problems of economic policy and administration.

EMMINGER, O. *Die Herrschaft der Schlagworte in der Jungsten Wahrungspolitishen Diskussion.* (Institut fur Weltwirtschaft an der Universitat, Kiel, 1961.) Pp. 24. Price not stated.

FAIRWEATHER, W. L. B. *Teach Yourself Investment.* (English Universities Press, London, 1960.) Pp. 176. 11/3 Aust. MARKOWITZ, H. M. *Portfolio Selection. Cowles Foundation Monograph No. 16.* (John Wiley, New York, 1959.) Pp. 344. $7.50.

These two books contrast in content and style. The "Teach Yourself Investment" comprises, against an U.K. background, a popular survey of types of, and policies for, financial investments. Markowitz's exposition complements the security analyst's work which forms an input for portfolio selection. The author develops the notion of efficient portfolio with discussions of risk utility maxims and associated concepts—mostly better appreciated, despite the book's attempts, by those possessing knowledge of statistics and matrix algebra.

FISHER, F. J. (Ed.). *Essays in the Economic and Social History of Tudor and Stuart England: In Honour of R. H. Tawney.* (Cambridge University Press, 1961.) Pp. 235. 30/- Aust.

FOGEL, R. W. *The Union Pacific Railroad.* (John Hopkins Press, Baltimore, 1960.) Pp. 129. $3.50.

This study of the Union Pacific provides new material to controvert the traditional explanation of the company's ruin, showing it as a premature enterprise representing a real dichotomy between sound private investment principles and public economic necessity. The treatment has added interest in that the author draws on economic theory in the determination and analysis of historical fact.

GOWDA, K. V. *Appreciation of the Indian Rupee.* (Chaitanya Publishing House, Allahabad, 1961.) Pp. 269. Rs. 15 Sh. 30.

GULATI, I. S. *Resource Prospects of the Third Five Year Plan.* (Orient Longmans, Bombay, 1960.) Pp. 154. Rs. 10.

An attempt by a private investigator—who was previously on the staff of the Indian Planning Commission—to estimate the yield of taxes and loans to the Indian Government during the current (Third) Five Year Plan, with proposals for new taxes or higher rates on existing taxes to achieve the required target.

GULICH, W. *Volkwirtschaftliche Gesamtrechnung.* (Arbeiten der Bibliothek des Instituts fur Weltwirtschaft, Kiel, 1960.) Pp. 260. DM. 18.

GURTOO, D. H. N. *Balance of Payments 1920-1960.* (S. Chand & Co., Delhi, 1961.) Pp. 241. Rs. 15.

An extensive study of the available statistical material on India's balance of payments for the past 40 years. This is mainly of historical interest, since the past is unlikely to be a good guide to the future.

HEADY, E. O. and DILLON, J. L. *Agricultural Production Functions.* (Iowa State University, Ames, 1961.) Pp. 667. $6.95.

HEGELAND, H. (Ed.). *Money, Growth and Methodology, and Other Essays in Economics in Honour of Johan Akerman.* (CWK Kleerup, Lund, Sweden, 1961.) Pp. 509. Price not stated.

HERSHLAG, Z. Y. *Turkey. An Economy in Transition.* (Uitgeverij van Keulen N.V., The Hague.) Pp. 340. 55/- stg.

HILTON, G. W. *The Truck System: Including a History of the British Truck Acts, 1495-1960.* (W. Heffer & Sons, Cambridge, 1960.) Pp. 166. 21s. stg.

The first part of this book examines the nature of the truck system, much of the evidence being drawn from the Report of the Truck Commission of 1871. The second section contains a history of the truck acts, although discussion is centred around the act of 1831.

HOSELITZ, B. F. et al. *Theories of Economic Growth.* (Free Press of Glencoe, Illinois, 1961.) Pp. 344. $7.50.

INTERNATIONAL LABOUR OFFICE. *Services for Small-Scale Industry, Studies and Reports, New Series, No. 61.* (I.L.O., Geneva, 1961.) $2.00 or 12/- stg.

This volume is addressed primarily to those providing advisory or other services for small-scale industrialists, particularly in less advanced countries. There are chapters on the characteristics and needs of small-scale industry; on training, extension and consulting services; on financial and physical assistance; and on the formation of co-operative associations. Economic and social research and the relation of small-scale industry to economic growth are also considered. There is some useful empirical material in the appendices.

INTERNATIONAL LABOUR OFFICE. *The International Standardisation of Labour Statistics.* (I.L.O., Geneva, 1959.) Pp. 124. $1.00 or 6/- stg.

KLEIN, L. R. et al. *An Econometric Model of the United Kingdom.* (Basic Blackwell, Oxford, 1961.) Pp. 312. 60/- stg.

KOZELKA, R. M. *Elements of Statistical Inference.* (Addison-Wesley, Reading, Massachusetts, 1961.) Pp. 150. $5.00.

This book provides an elementary introduction to the basic statistical concepts and methods. The early chapters describe the common discreet and continuous distributions, for which the usual moment statistics are obtained and discussed. This leads on to the normal distribution used as an approximation, and the central-limit theorem. Later chapters give a simple account of some problems of point estimation, interval estimation, hypothesis testing, and bivariate analysis.

KUCZYNSKI, J. (Ed.). *Zur politikonomischen Ideologie in Deutschland vor 1850 und andere Studien.* (Political Economy in Germany up to 1850 and Other Studies.) (Akademic Verlag, Berlin, 1960.) Pp. 176. DM 11.

These studies form Vol. 10 of *A History of the Condition of Workers in Germany from 1789 to the Present Day;* they deal mainly with the development of political economy in relation to labour.

LAKDAWALA, D. T. and SANDESARA, J. C., *Small Industry in a Big City,* University of Bombay Publications, Economics Series No. 10. (Vora & Co., Bombay, 1961.) Pp. 387. Rs. 20.

The authors present the results and conclusions of a field survey of more than one thousand small firms, both factory and non-factory, in Bombay. The

data collected cover capital structure, financial position, employment and earnings and composition of output. An attempt has been made to correlate these data to assess the productivity of the industries surveyed. Brief notes on ten of these industries are apprended.

LEHBERT, B. *Kieler Studien, 57; Die Entwicklung der Stahlwirtschaft.* (Institut fur Weltwirtschaft, Kiel, 1961.) Pp. 200. Price not stated.

LEVEN, J. V. *The Export Economies. Their Pattern of Development in Historical Perspective.* (Harvard University Press, Cambridge, Mass., 1960.) Pp. 347. $6.75.

This book was begun as an enquiry into the various forms of export taxation. The Peruvian guano economy of the past is dealt with at length. Also the more recent experiences of Burma in trying to mitigate its dual economy with the aid of an official rice marketing board. Some general observations are made on the problems of balanced growth in such and similar types of economies.

LUTZ, F. A. and HAGUE, D. C. (Eds.). *The Theory of Caiptal. Proceedings of a Conference held by the International Economic Association.* (Macmillan & Co., London, 1961.) Pp. 415. 72/- Aust.

MORGAN, E. V. *The Structure of Property Ownership in Great Britain.* (Oxford University Press, 1960.) Pp. 207. 57/- Aust.

MOSHER, A. T. *Annual Report of the Council on Economic and Cultural Affairs 1959.* (The Council on Economic and Cultural Affairs, Inc.) Pp. 32. Price not stated.

NARAYAN, B. K. *Agricultural Development in Hyderabad State 1900-1956.* (Keshav Prakashan, Secunderabad, India.) Pp. 115. Rs. 5.00.

This is a Ph.D. thesis. Hyderabad was the largest of the Princely States but by no means the most advanced. It was a feudal relic famed for the wealth of its rulers and the poverty of its people. The book quotes a large number of statistics, but there is little or no evidence of economic development, except perhaps in the last ten years of the period. As the author admits, most of the statistics are unreliable anyway.

NURSKE, R. *Patterns of Trade and Development.* (Basil Blackwell, Oxford, 1961.) Pp. 62. 6/- stg.

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PHELPS, C. W. *Commercial Credit Insurance as a Management Tool.* (Educational Division, Commercial Credit Company, Baltimore, 1961.) Pp. 111. Price not stated.

This is No. 3 in "Studies in Commercial Financing" sponsored by the Commercial Credit Company. The study is concerned with credit insurance in relation to manufacturing, wholesaling and service organisations in their dealings with each other. Matters discussed include the extent of the coverage, costs and related benefits and managerial uses and limitations. Consumer credit insurance and export credit insurance are not deal with.

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This is a revised and enlarged paper-back edition of the well-known text. There are new sections on Marx, on Keynes, and a chapter on contemporary theory with particular emphasis on the "national income" approach. In addition, other sections have undergone considerable revision, although the main structure of the book remains unchanged.

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This book, though substantially the content of a doctoral dissertation (University of Bombay), does not appear to contain any novel contribution to the subject. There are chapters on the rate of investment, resource allocation, choice of project and technique, location of industries, and controls.

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